F·A·A·M facility for airborne atmospheric measurements

FLIGHT FOLDER

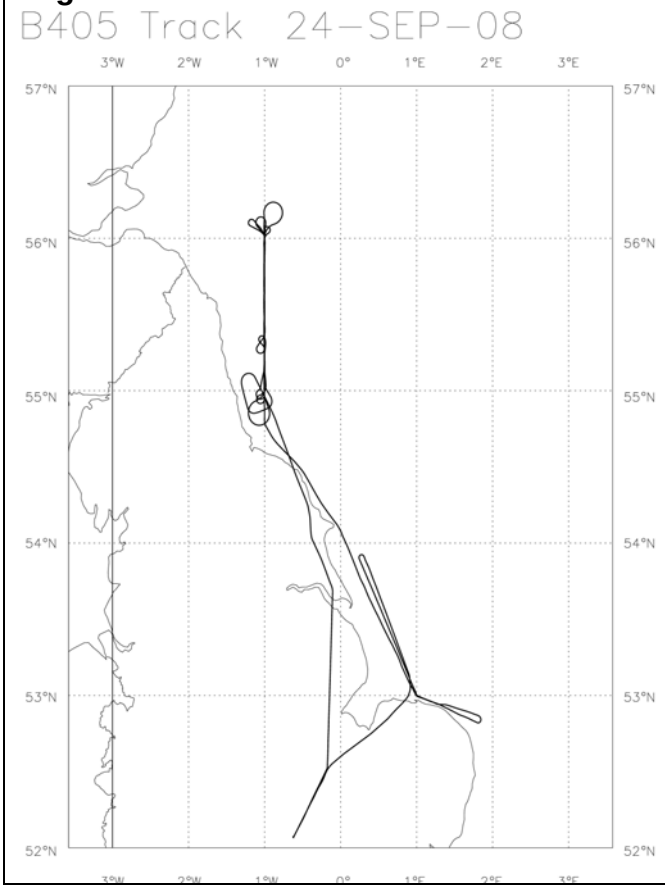
Flight No.	B405
Date:	24/09/08
Take Off:	08:56:35
Landing:	14:13:55
Flight Time	5h 17m 20s

Campaign: ADIENT / CAVIAR

Operating Area: SW Approaches

POB	Position	Name	Institute	Logs y/n
1	Captain	Alan Roberts	Directflight	
2	Co-pilot	Luc Lathouwers	Directflight	
3	CCM1	Gaynor Ottaway	Directflight	
4	Mission Scientist	Chawn Harlow	Met Office	
5	Flight Manager	Steve Devereau	FAAM	
6	Core Chem / AVAPS / CCM2	Doug Anderson	FAAM	
7	Cloud Physics	Phil Rosenberg	FAAM	
8	ARIES	Stuart Newman	Met Office	
9	SWS / SHIMS	Debbie O'Sullivan	Met Office	
10	Wet Neph / PSAP	Andy Wilson	Met Office	
11	CVI / FWVS	Jeff Norwood-Brown	Met Office	
12	TAFTS	Ralph Beeby	Imperial College	
13	MARSS/DEIMOS	Dave Pollard	Met Office	
14	Mission Scientist 2	Jim Haywood	Met Office	
15	VIP, Met Office CE	John Hirst	Met Office	
16	AMS / SP2	Gavin McMeeking	Manchester University	
17				
18				

Flight Track:

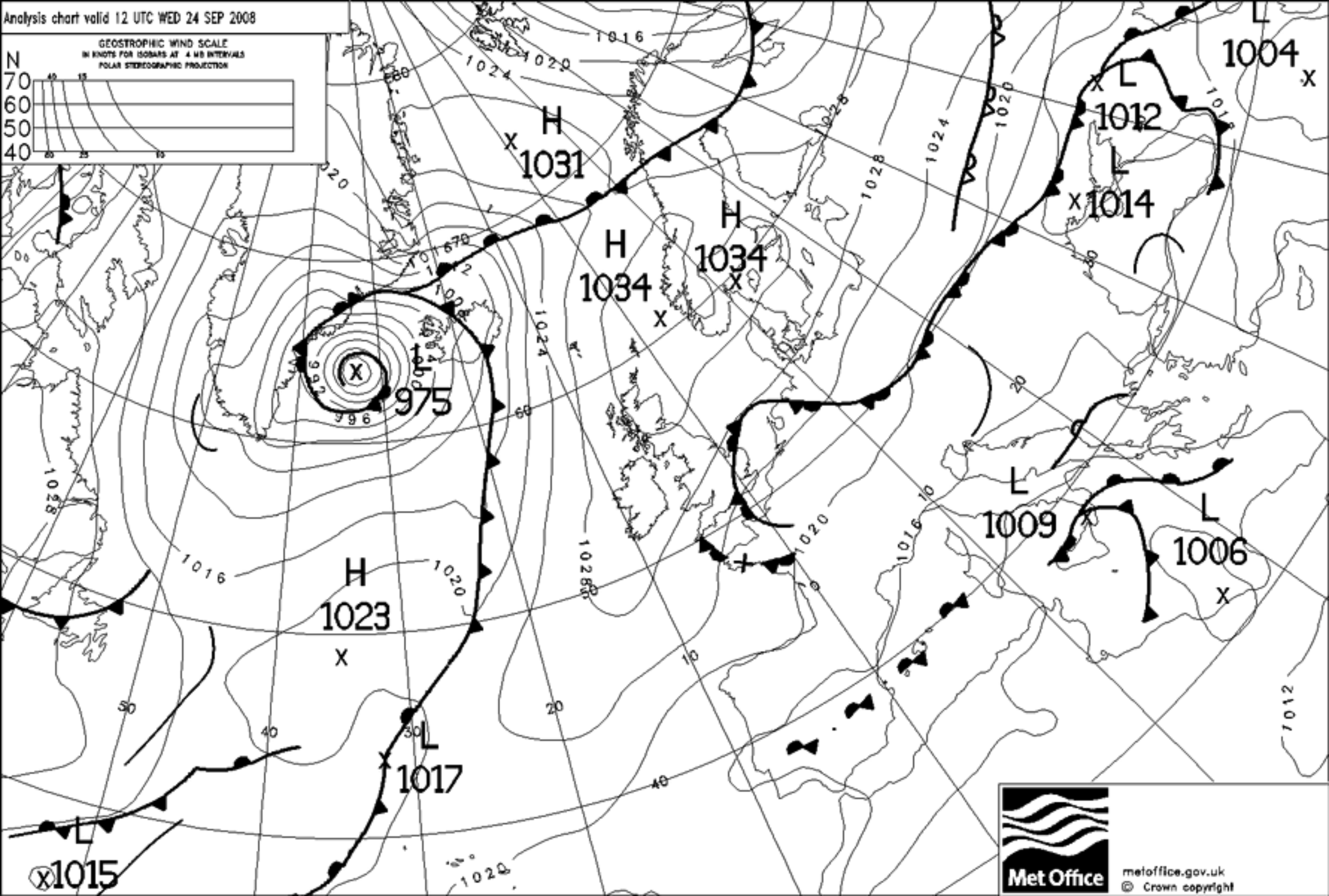


FLIGHT SUMMARY

Flight No B405
Date: 24th September 2008
Project: VACAR/VISURB
Location: N Sea

Start Time	End Time	Event	Height (s)	Hdg	Comments
065355		neph	0.00 kft	307	zero
084455		!	0.02 kft	123	engine start
084946		!	0.02 kft	122	start taxy, open ASPs
085635		T/O	0.00 kft	032	
090309		!	10.1 kft	035	Nevzorov/JW zero
090349		!	11.5 kft	033	retract BBR cover
092626		!	24.6 kft	350	Heimann cal
094522	095544	Run 1.1	27.0 kft	341	
094522		sonde 1	27.0 kft	341	
094825		sonde 2	27.0 kft	000	
095138		sonde 3	27.0 kft	001	
095424		sonde 4	27.0 kft	000	
095711		!	27.0 kft	070	Nevzorov/JW zero
100223	102017	Run 1.2	27.0 kft	173	
100223		sonde 5	27.0 kft	173	
100524		sonde 6	27.0 kft	178	
100845		sonde 7	27.0 kft	178	
101128		sonde 8	27.0 kft	178	
101355		!	27.0 kft	165	Nevzorov/JW zero
102017	103209	Profile 1	27.0 - 15.0 kft	023	
102358		!	23.3 kft	000	extend BBR cover
103649	104747	Profile 1	15.0 - 4.7 kft	181	
105053		!	4.7 kft	044	Nevzorov/JW zero
105158	110234	Profile 1	4.7 - 0.05 kft	000	@500fpm
110529	111422	Profile 2.1	0.3 - 4.4 kft	194	retract BBR cover
111322		!	3.9 kft	177	Nevzorov/JW zero
111422	111907	Profile 2.2	4.4 - 2.4 kft	175	
111916	112245	Profile 3.1	2.5 - 4.4 kft	176	
112457		!	4.4 kft	073	Nevzorov/JW zero
112545	113022	Profile 3.2	4.4 - 2.4 kft	017	(end @2750 ft for QNH1026)
113324	113830	Profile 4.1	2.5 - 4.4 kft	174	end @ point alpha
113635		!	3.6 kft	178	Nevzorov/JW zero
113710		!	3.9 kft	179	Heimann cal
114129	115720	Run 2.1	4.4 kft	017	(run 4750 ft for QNH1026 = 4800 ft RADALT)
114346		!	4.4 kft	006	Nevzorov/JW zero
115729	120358	Profile 5.1	4.4 - 0.5 kft	000	
120359	122027	Run 3.1	0.5 kft	179	
120600			0.5 kft	178	1206, CVI and H20 CPC see unusual spike
120946		!	0.5 kft	176	Heimann cal
122034	123004	Profile 6.1	0.5 - 5.6 kft	177	500 fpm
123011	123348	Profile 6.1	5.8 - 10.0 kft	132	1000 fpm
123355	124132	Profile 7.1	10.0 - 2.6 kft	141	
124321	124657	Profile 7.1	2.7 - 0.13 kft	150	
124657	131008	Run 4.1	0.5 kft	147	
125745		!	0.5 kft	146	Heimann cal

131151	133647	Run 5.1	1.0 kft	288 1 kft
132056		!	1.0 kft	336 Heimann cal
133409		!	1.0 kft	339 Nevzorov/JW zero
133813	134708	Profile 8.1	1.0 - 10.0 kft	149 from 1 kft
141355		Land	-.02 kft	209 Cranfield


Analysis chart valid 12 UTC WED 24 SEP 2008
GEOSTROPHIC WIND SCALE
IN KNOTS FOR ISOBARS AT 4 MB INTERVALS
POLAR STEREOGRAPHIC PROJECTION
N
70
60
50
40
H
1031
H
1034
H
1034
H
1023
L
975
L
1017
L
1015
L
1012
L
1014
L
1004
L
1009
L
1006
1016
1020
1024
1028
1012
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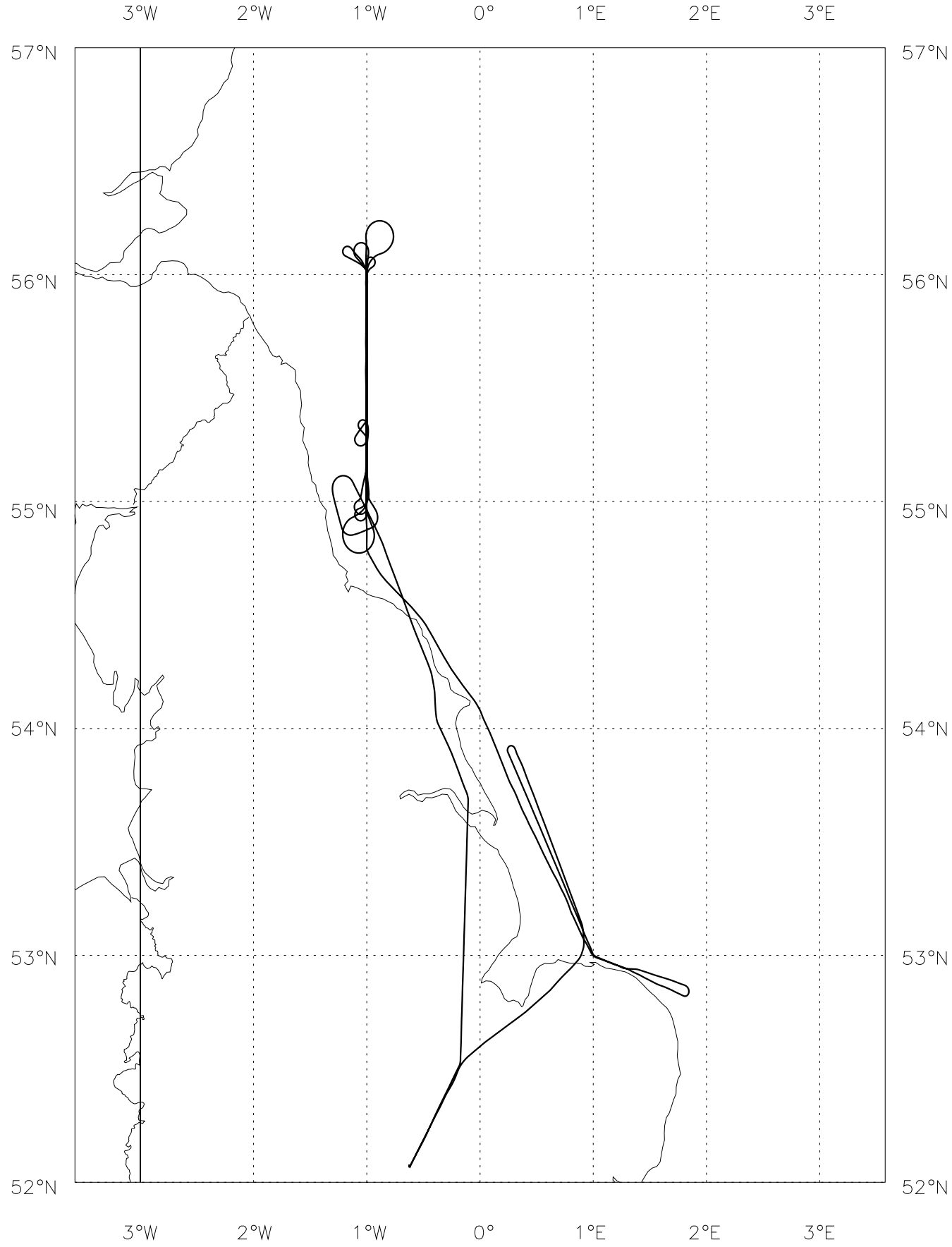
B405 Track 24-SEP-08



Sortie Flight B405
24th September 2008.
VACAR and Visurb

Take off Cranfield 1000L (0900Z)
Land at Cranfield ~1500L (1400Z)

Aims
To underfly the IASI instrument on the Metop satellite (**1003Z overpass**) in a region of boundary layer cloud to test new techniques for assimilating IR satellite data in cloud affected regions. Also to study the radiative and chemical properties of aerosol plumes off the East coast.

Weather
Boundary layer cloud with clear sky conditions above.

Way points
ALPHA = 55N 1deg 10min W
BRAVO = 56N 1deg 10min W
Note that these points should be in area of boundary layer cloud; if necessary these points can be repositioned.
Ampep points: 79, 80, 87, 40, 41

Sortie

1. Take off and transit to point ALPHA to arrive a max attainable altitude (45mins) T+45
2. Fly straight and level run from ALPHA to BRAVO dropping sondes at T+0, T+3, T+6 and T+9 (10mins) T+55 (IASI overpass should occur during middle of either this run or the next)
3. Fly straight and level run from BRAVO to ALPHA dropping sondes at 3 min intervals once first sonde has splashed down. (10mins + 2 turn) T+67
4. Profile descent along line ALPHA-BRAVO at 1000ft/min to 50ft reducing to 500ft/min in the boundary layer profiling through the cloud aiming to end at point BRAVO (38mins) T+105
5. Fly series of saw tooth profiles from 1000ft below **cloud tops** to 1000ft above **cloud tops** at 500ft/min between BRAVO and ALPHA (20mins) T+125
6. Fly straight and level run from ALPHA to BRAVO at level 1000ft above cloud tops (20 mins) T+145
7. Profile descent North turning in profile to arrive at point BRAVO at 500ft heading South. (10mins) T+155
8. Straight and level run from BRAVO to ALPHA at 500ft (this run should be in the aerosol layer and below all cloud – adjust altitudes accordingly). (20mins) T+175
9. Fly to the following AMPEP points at 500ft 79, 80, 87, 40, 41 at 500ft remaining clear of cloud (60mins T+235)
10. Recover to Cranfield (20mins T+255)

Key Instrument Details:

SWS - to look down during high level runs to characterise clouds. Also to look down during run 1000ft above cloud. Look up during 500ft runs.
ARIES - to look down for most of high level run – (100% during IASI overpass run) but with short (2min) zenith view during other run at high level. Look down during run above cloud with short zen view.
CVI - During high level and profile descent operate in aerosol mode with CVI hygrometer operating.
Wet Neph – operated during all of 500ft runs

Miss Scientist Notes:
Aim of VACAR is to underfly IASI over boundary layer cloud and characterise the cloud tops. The IR instruments do not see all the way through the clouds so concentrate the saw tooth profiles to characterise the cloud top boundary.
Visurb needs to be cloud free at low level adjust altitude as necessary.

Scientific Rationale:
The IASI instrument on the Metop satellite is a high resolution interferometer offering unprecedented vertical resolution and accuracy profiles of temperature and water vapour. The Met Office began assimilating IASI data in November 2006 and the data has already had a significant impact on NWP skill. However, our current usage of IASI data is very conservative as we only use data from around 150 channels (out of a possible 8461) and we only use it over ocean in cloud free conditions. We are limited in our primarily because we do not have the computer power to utilise all the channels using conventional techniques. Within OBR we have developed a new fast radiative transfer code which can be used to predict all 8461 channels of IASI very quickly. Our initial results in clear skies show that we have the potential to utilise more IASI data including data gathered over land. OBR scientists are busy analysing data from the BAe146 testing this new technique. The next stage is to extend our usage of the IASI data to cloud affected pixels. Gathering data with the BAe146 is the first stage in this process. The Bae146 carries an interferometer similar to IASI called ARIES and can also measure the true state of the atmosphere using dropsondes and by profiling. The combination of these data and the IASI overpass will allow us to develop new techniques to utilise IASI data in cloud affected regions with a potentially large impact on NWP skill in the future.

Within OBR there is a project called VISURB which aims to look at evaluating the performance of the UM in predicting aerosol and visibility which have a significant impact on air quality and on the surface energy budget. During this flight we are expecting a significant plume of aerosol from the near continent to pass over the North Sea and lead to increased pollution levels off the coast. Today's flight will transect this plume at 500ft to 1000ft. Instrumentation on the BAe146 will measure the size distribution and optical properties of the aerosol and use these data to validate the performance of the UM.

B405 Debrief Mission Scientist: Chawn Harlow

Date: 24/09/08

Campaign: VACAR/VisUrb

Synoptic Situation: High pressure in Northern North Sea off Norway.
Light easterly wind in North Sea. Stratocumulus in operating area.

Summary: A highly successful VACAR portion of the sortie with some in situ sampling of aerosol for VisUrb during the second half of the sortie. This second portion was too cloudy for radiation purposes and the AMS encountered heater problems during the most polluted portion of the circuit.

Sortie Detail: After transit to the operating area, a straight and level run (SLR) was carried out at FL 270 from point A (55*N, 1*10'W) to point B (56*N, 1*10'W) dropping four sondes. This was followed by a reciprocal SLR from B to A again dropping four sondes. There was a delay in the GPS lock on Sonde 2 that will make wind data unusable. A stepped profile from FL270 to 50' was then carried out staying in the vertical plane between A and B ending at B. Two full sawteeth were then carried out through the cloud sampling 1000' above and below the cloud. A profile was performed to 1000' above cloud top (4750' asl) where an SLR was carried out from A to B. We then profiled down to 500' asl and carried out SLR from B to A. This ended the VACAR portion of the sortie.

In order to locate the peak in the aerosol concentration profile, a sawtooth from 500' to FL100 and back down again was performed starting at A, passing waypoint 80 at 5000', and ending about 26 nm south of WP 80. A run at 500' from there to WP87 and on to WP 40 was then performed, in increasingly hazy and cloudy conditions. AMS reported that it had gone US somewhere between WP 87 and WP 40 and did not become serviceable for the rest of the flight. We were rained on between WP 87 and WP 40. We then returned to WP 87 at 1000' before returning to Cranfield.

Mission Scientist's Log

DigiMemo e-Page .....

Flight No **B405** Date 24/09/08 Name Chawn Harlow Page 1 of 5

GMT	Run / Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
085708	T/O				T/O Cranfield
0920		FL240			Instrument Status check:
					ARIES - OK
					MARSS - OK Deimos 50GHz US
					SWS - OK
					Cloud Phys - PCASP ✓ FSSP ✓ All OK
					CVI - OK
					AMS - OK
					Core - OK
					TAFTS - OK
					AVAPS - OK
0940		FL270			PCASP noisy due to alt.
					Cloud conditions 8/8 SCu
					below, nothing above
094502	R1.1/S1	FL270			Start Sonde 1 launch
					Sonde 1 ok
094825	S2	FL270			Sonde 2 - delay in GPS
094950					GPS lock on S2 ok now
					Breaks in cloud to left
095138	S3				Sonde 3 - GPS lock OK
					Variable Bound layer emissions
					also seen with MARSS
					Break in cloud ahead
095424	S4				Sonde 4 - GPS OK
095544	R1.1	FL270			End A to B

Mission Scientist's Log

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Flight No **B** 405 Date 24/09/08 Name C. Harlow Page 2 of 5

GMT	Run / Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
100223	R2/S5	FL270			Start B to A Sonde 5
					Cloud edge before Run 2
100524	S6	FL270			Sonde 6 - all good
100845	S7	"			Sonde 7 - all good
101128	S8	"			Sonde 8 - " "
	~~R2~~ R1.2	"			End
102017	P1	FL270			Start at ~~B~~ A
103209	P1	FL150			Interrupt at ~~A~~ B
103649	P1	FL150			Resume at ~~A~~ B
	"	8300'			Top of BL seen in aerosol
104747	P1	5000'			Interrupt ~~at A~~
105158	P1	5000'			Resume at 500 fpm
	P1	8500'			Cloud top 3500' on science (3750')
	P1				Cloud base 1300' on sci / 1600' AC
110234	P1	50'			End at B
110529	P2.1	300'			Start at B Saw-tooth
					CVI mode
					aero load greater above cloud
111422	P2.1	4750'			End ~~at~~
"	P2.2				Start
					MSG retrievals ~~cloud top~~
					cloud top ht 2-3 kft
					cloud top temp 5-10 C
111907	P2.2				End eff rad 5-6 μm
111916	P3.1				Start

Mission Scientist's Log

DigiMemo e-Page .....

Flight No **B**.405... Date 24/09/08... Name C. Harlow... Page 3 of 5

GMT	Run / Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
					Cloud tops at 3750' on
					QNH 1026
112205					Pt A
112245	P3.1	4750'			End
112545	P3.2	4750'			Start at A
1128	P3.2				Cloud top temp 6.5C
	P3.2	2750'			End
113324	P4.1	2750'			Start
	"	3750'			Cloud top temp 4.5C
					Cloud top ht. 3750' (+200' from rad alt)
113830	P4.1	4750'			End at A
114129	R2.1	4750'			Start at A AMS on Rosemount
115719	R2.1	4750'			End at B AMS on CVI
115729	P5.1 ~~R2~~	"			Start at B
					Aerosol highest right above
					cloud
120358	P5.1	500'			End at 500' at B
1203		1200'			AMS on Rosemounts under cloud
120359	R3.1	500'			Start at B
1205					QNH 1032
1207					Spikes in aerosol due to
					ship tracks? not seen on AMS
122027	R3.1	500'			End at A
"	P6.1	500'			Start at A
1223	"	1900'			PT 79

Mission Scientist's Log

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Flight No **B**405 Date 24/09/08 Name C. Harlow Page 4 of 5

GMT	Run / Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
	P6.1	5500'			1000 fpm
123348	P6.1	FL100			End
123355	P7.1	"			Start
123934	"	5000'			PT 80
124132	"	3000'			Interrupt
		3000'			AMS + PCASP seeing highest
					aerol conc since start of
					flight
124321	P7.1	3000'			Resume
124656	P7.1	500'			End
124657	R4.1	500'			QNH 1029 / Start R4.1
1257	"				Rain !
	"				MARSS ch 18 saturating
1259	"				Rain has stopped
					QNH 1028
1300	R4.1				PT 87
	"				AMS having problems with heater
131002	R4.1	500'			PT 87 End R4.1
131150	R5.1	1000'			Start
1313	"	"			AMS to CVI mode
1320	"	"			PT 87 MARSS sees precip ahead
1321	"	"			Raining again
1325	"	"			No more visible rain
"	"	"			Entering plume again
1336					AMS feeling better

Mission Scientist's Log

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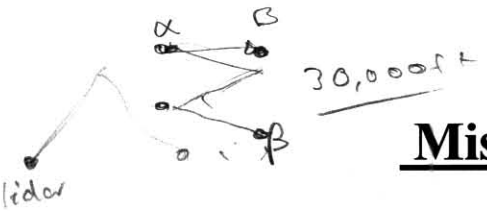
Flight No **B**.405.. Date 24/09/08... Name C. Harlow Page 5 of 5

GMT	Run / Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
133647	R5.1	1000'			13 mi short of PT 80; End
133813	P8.1	1000'			Start
1339	"	"			QNH 1013
	"	"			Cloud top ht 5450'
134708	P8.1	FL100			End of Science
				Note:	Lower SHIMS U5 for the
					second half of the flight
				CVI	All Good
				Wet Neph.	" "
				AMS	Heater problems; Data quality
					uncertain
				AVAPS	Sonde 5 - no launch parameters
					Sonde 2 - late GPS Lock
				Cloud Phys	All Good !



Mission Scientist's Log

VACAR / VISURB

Mission #2.

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Flight No **B**.405..... Date 24 Sept 08 Name JIM HAYWOOD Page 1 of .....

GMT	Run / Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
					NE coast between 55N-56N
					Sc cloud expected
					Mixed Cu on take-off 4/8.
					ft
					Neph for take off.
					10K — Dust at 8-10Kft
					15 80 Neph sca (m^{-1}).
0942					Close to operating area.
					8/8 Sc below.
09:4522	St R1.1	270 FL	355M	55N, 1W	Sonde #1. Point α
					V good Sc sheet. 8/8.
094825					Sonde #2. No GPS until 23 4kft
095100					A few breaks in Sc to W of region
095138					Sonde #3.
					MARSS reports boundary layer variability
095424					Sonde #4.
095544	End R1.1	FL270			
10020					Crossing edge of Sc.
100223	St R1.2	FL270			
— " —					Sonde #5 (late launch detection)
100524		FL270	179M	56 N, 1W	Sonde #6
100845		"			Sonde #7
101128					Sonde #8

Mission Scientist's Log

DigiMemo e-Page .....

Flight No **B**..... Date ..... Name ..... Page ..... of .....

GMT	Run / Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
	End R12				Some breaks in cloud to
102017	St P1	270FL			N of operating area.
103649	Int P1	150FL			Interupt profile.
104747	Int P1	5000ft			
105158	P1 ↓	5000ft			
		3500ft			Cloud tops. 4750 / 2750
					QNH 1026mb. : 3750 Aircraft
		2500ft			Cloud base (main cloud)
					Some cloud below.
					Patchy low cloud at 1500ft.
110254		50ft			End P1.
110529	St ST 2-4	300ft			
110922	ST 2-4	4750ft			QNH 1026mb 2-3,000ft.
112811					Cloud tops 3·4kft.
					SST ~12°C.
113324	Reconnce ST	2600ft			ATC – Sawtooths
114129	St R3	4FL			
122027		500ft			Profile.
					Aerosol scattering
					20×10^{-6} m^{-1}
					
					5000ft = 2000m
					500 ft
					× 20
					$= 40\times10^{-3}$
					= 0.04
					$20\ m^{-1}$

CLOUD PHYSICS LOG Flight B405

Date:24/09/08 Operator:pdr DRS time: DAU1 time: DAU2 time: DAU3 time: AUX1 time: AUX2 time:

Pcasp vref 7.0, flow 8.2 2dc end element voltages 1.5, 1.15 ffssp vref 3.2

G.M.T	PCASP		FFSSP	SID1	SID2	2D2-C		2D2-P		CIP25			CIP100			Habit	Remarks
	Conc/cc	Mean R	Block TX	Count	Count	Conc/L	Max size	Conc/m3	Max size	Conc m3	Max size	LWC	Conc m3	Max size	LWC		
																	2dp not run due to noise problems
09:39:00																	Noise on pcasp ch1 due to cold
																	Start profile 1
10:44:00	180		41														Entered boundary layer at ~fl 95
10:48:30	100		42														Fl 50
10:55:10	400		443														Fl 30 amoungst cloud
10:57:05	350		530														Fl 20 near cloud base
10:59:10	200		545														Fl 10 below cloud
11:02:30	200		546														50 ft
																	End profile 1
																	Start profile 2.1
11:10:00	500	735				30										drops	Fl 25 In cloud
11:14:20	100		1506														Fl 50 above cloud
																	End profile 2.1
																	Start profile 2.2
11:16:30	265		1607			10	100										Fl 35 near cloud tops
11:19:00	300		1986			0											Fl 25
																	End profile 2.2
																	Start profile 3.1
11:20:20	220		2234			5											
11:22:40	130		2420														Fl 44
																	End profile 3.1
																	Start profile 3.2
11:29:00	300		2750			10	100										Fl 30
																	End profile 3.2
11:30:30	350		2772														Fl 24
																	Start profile 4.1
11:35:20	200		3295			20											Fl 32
11:38:10	170		3420														Fl 42
																	End profile 4.1
																	Start run 2.1
11:42:00	140																
11:47:00	120																
11:52:00	100																
11:57:00	110																
																	End run 2.1
																	Start profile 5.1
11:59:30	600		3734			30											Fl30. Pcasap conc reached 600 just before cloud penetration
12:01:00	320																Fl 20
12:02:30	240																Fl 10
																	End profile 5.1
																	Start run 3.1
12:04:30	180																
12:09:00	230																
12:14:00	250																

CLOUD PHYSICS LOG Flight B405

Date:24/09/08 Operator:pdr DRS time: DAU1 time: DAU2 time: DAU3 time: AUX1 time: AUX2 time: Page 2 of 2

Pcasp vref 7.0, flow 8.2 2dc end element voltages 1.5, 1.15 ffssp vref 3.2

G.M.T	PCASP		FFSSP	SID1	SID2	2D2-C		2D2-P		CIP25			CIP100			Habit	Remarks
	Conc/cc	Mean R	Block TX	Count	Count	Conc/L	Max size	Conc/m3	Max size	Conc m3	Max size	LWC	Conc m3	Max size	LWC		
12:18:00	270																
																	End run 3.1
																	Start profile 6.1
12:23:00	360																
11:25:00	400																Fl 25
12:27:30	320																Fl 40 above cloud
12:33:00	70																Fl 90 left boundary layer at ~fl 50
																	End profile 6.1
																	Start profile 7.1
12:38:20	120																Fl 60
12:39:20	260																Fl 50
12:40:20	720																Fl40
12:41:10	830																Fl30
12:43:30	830																Fl 27 at end of break
12:44:30	800																Fl20
12:45:30	1070																Fl10
12:46:15	1040																Fl05
12:47:00	915																Fl01
																	End profile 7.1
																	Start run 4.1
12:50:30	890																
12:54:00	1010																
12:56:00	1000																
12:58:30	900		4359			14	700									drops	In precip
13:04:00	600																
13:10:00	600																
																	End run 4.1
																	Start run 5.1
13:12:00	500																
13:16:00	560																
13:20:00	480																
13:24:00	600	4484				20	375										In cloud
13:27:30	1020	4502															
13:35:00	900	4509															
13:36:40	780	4511															
																	End run 5.1
																	Start profile 8.1
13:38:50	735	4513															Fl 10
13:41:00	400	4514															Fl 30
13:42:40	100	4547															Fl50
13:44:20	10																Fl 70 left boundary layer
14:17:20																	Pcasp pump switched off to check for noise. None seen

Revision date: 11/12/2008 3:23 PM

CLOUD PHYSICS PROCESSING LOG

Flight number: **B405** **T/O:** 08:56:35
Date of flight: 24/09/08 **Land:** 14:13:55

A) FFSSP PROCESSING DONE IN EXETER		
Processing Stage	Done?	Comments
1) Transfer *.txt files from DVD to processing PC		
Bnnn_FFSSP_hh.txt for each hour of data Bnnn_FFSSP_HVMS.txt		**hh =** **Last sec processed =**
2) FTP the files (ascii) from the PC to directory PMSDATA: on FLOODS		**File size =**
3) FLOODS> **RUN MRFB:[PMS.FAST_FSSP]FSSP_EXTRACT_TAS** a) Flight number: **Bnnn** b) Path name: **MFDDATA:Bnnn_MFDX** c) Output directory: **PMSDATA:** d) Start time: *0 if unknown (see comment box)* e) End time: *240000 if unknown*		Use time just before/after take-off/landing. If T/O /landing just after/before the hour, ensure start/end time is before/after the hour if there is an FFSSP_hh.txt file for that hour.
4) FLOODS> **RUN MRFB:[PMS.FAST_FSSP]FFSSP_PROCESS_TXT** a) Flight number: **Bnnn** b) Directory: **PMSDATA:** c) TAS in processing: **Y** d) Vel threshold (clicks) **0** e) Calibration file: *Use the most recent calibration file.* Format FFSSP_CALddmmyyyy.txt Calibration files to be stored in MRFB:[PMS.FAST_FSSP] f) Adjust FFSSP time **Y/N** g) If Y, enter value to add to data time (seconds)		**Total glitches =** **Sec file written ok?** **Note calibration file used** Yes only if gross errors occur in FFSSP time eg; ~ 1hour
5) FLOODS> **WAVE** a) WAVE> **write_procffssp_to_m5,'pmsdata:Bnnn_procffssp.dat', 'mfddata:Bnnn_mfdX','pmsdata:Bnnn_m5procffssp',/auto** b) WAVE> **exit**		Use PVWAVE for this section **Note time correction applied to FFSSP by /auto =**
6) FLOODS> **MODIFY** a) Modifying datasets: **pmsdata:Bnnn_m5procffssp** b) Dataset: **mfddata:Bnnn_mfdX** c) New dataset: **mfddata:Bnnn_mfdY (y=x+1)** d) Parameter description file: *leave blank to use default*		**Input file size =** **M5 output file size =**
7) CHECKS: i). Are FFSSP and JW/Nevzorov LWC synchronized in time? *In flight_plot, parameters* *JW LWC para 535* *Nevzorov LWC para 602* *FFSSP LWC para 1202* ii). If not, repeat from step 5b replacing /auto with **addt=x** which adds x+20 secs to FFSSP time.		**Synchronized?**

CLOUD PHYSICS PROCESSING LOG

Flight number: **B405**
Date of Flight: 24/09/08

B) 2D PROCESSING		REPROCESS +1hr
Processing Stage	Done?	Comments
1) Transfer Bnnn.dat file from CD/DVD to PC	Y	
2) Zip up file on PC (Bnnn.zip)	Y	
3) FTP the zipped file (binary) from the PC to the directory SEADAS_DATA:[SEADAS_DATA] on FLOODS	Y	15412 blocks
4) Log on to FLOODS		
5) Unzip SEADAS_DATA:[SEADAS_DATA]Bnnn.zip	Y	**Size of Bnnn.dat = 152688**
6) FLOODS> **WAVE**	Y	Use PVWAVE for this section
WAVE> **CONVERT_SEADAS_FILE** a) Input file: **SEADAS_DATA:[SEADAS_DATA]Bnnn.dat** b) Output file: **SEADAS_DATA:[SEADAS_DATA]Bnnn_seadas.dat** WAVE> **exit**		**Blocks read = 42857** **Blocks written = 42857** **Bad reads = 0**
7) FLOODS> **RUN MRFB:[PMS.SEADAS]READM200_FILE**	Y	
a) Default directory: **PMSDATA:** b) Flight number: **Bnnn** c) Disk file name: **SEADAS_DATA:[SEADAS_DATA]Bnnn_seadas.dat** d) Comment string: e) Start time: *0 if unknown (T/O – 5 min)* f) End time: *240000 if unknown (Land + 5 min)* g) Read 2DC: **Y** h) Read 2DP: **Y** i) Secondary data: **Y** j) FSP-SYNC: **Y** k) cmd.str: **Y** l) Auto time correction: **N** m) Full length secondary:**N**		**Start = 085500** **End = 141500** Ignore error message scroll (vestigial error from tapes) **Are FRW, FSP, IMB, PCA,SEC files in PMSDATA? Y** **Are they non-zero in size? Y**
8) FLOODS> **WAVE**	Y	2D image display and printing
i). WAVE> **imagedisplay** a) 2D directory name: **PMSDATA:** b) Flight number: **Bnnn** c) File generation no: **0** d) Time from IWC plot: **N** e) Select probe: (**1**) 2DC (**2**) 2DP f) Start time: *As in 7e above* g) End time: *As in 7f above* h) Time interval (sec): **5** recommended (0 for all images)		Must be done from FLOODS itself. **Note any problems with images** **2DC images 1054- 1412 mainly liq H2O** **2DP not operated**
ii). WAVE> **auto_image** a) 2D directory name: **PMSDATA:** b) Flight number: **Bnnn** c) Enter date: **YYYYMMDD** d) Enter start time: *0 if unknown (T/O – 1 min)* e) Enter end time: *240000 if unknown (Land – 1 min)* f) Enter time interval (sec) between successive imaged blocks: **10**		Prepare imagery for Core data From own PC again **Start = 085500** **End = 141500**
iii). WAVE> **exit** to create files		FAAM_YYYYMMDD_R0_ Bnnn_2Dx-images.ps
iv). FTP ascii *.PS files from PMSDATA: to PC		Notes on this in instructions
v). Load each into Ghostview or other pdf-converter		
vi). Output as pdf file (720 dpi resolution), appending name prefix of **CORE-CLOUD-PHY**_ to converted files		12 pages 2DC

9) FLOODS> **RUN MRFB:[PMS.SPEC2D.AUTO]PROCESS2D_AUTO** a) Flight number: **Bnnn** b) Directory: **PMSDATA:** c) File generation: *Hit enter* d) Time correction: *Time offset of the 2D data* e) TAS: **Y** f) MFD directory: **MFDDATA:Bnnn_tas** g) Probe number: (**1**) 2DC (**2**) 2DP (**0**) Both *0 unless either probe known to be faulty* h) Start time: *0 if unknown (T/O + 30sec)* i) End time: *240000 if unknown (Land – 30sec)* j) Nominal averaging: **0.2** seconds for conversion to M5 k) Particle type 2DC: **8** if known to be in ice cloud **11** if known to be in water cloud l) Particle type 2DP: **8** if known to be in mixed-phase **8** if unknown m) Coefficient choice: **2** n) Output root filename: **PMSDATA:Bnnn_PROC2D**	Y 11	NB. an error message may appear, floating point exception, rerun and use time quoted in error message, repeat until successful. **X = B45_tas** **Start = 085500** **End =** 141500 **Time data processed to =** 141204 **2dproc files present?** *.2dc, *.2dp and *.dat
10) FLOODS> **WAVE** i) WAVE> **WRITE_PROC2D_TO_M5, 'PMSDATA:BNNN_PROC2D.DAT', 'PMSDATA:BNNN_M5PROC2D'** ii). **exit**	Y	Use PVWAVE for this section Error message about HDDR file should be ignored. **Records = 910**
11) FLOODS> **MODIFY** a) Modifying datasets: **pmsdata:Bnnn_m5proc2D** b) Datset: **mfddata:Bnnn_tas** c) New dataset: **mfddata:Bnnn_tas_2d** d) Parameter description file: leave blank to use default	Y	 **X = b405_tas** **Y = (X+1) = b405_tas_2d**
12) CHECKS: Are 2DC/2DP IWC of comparable magnitude and well-correlated with Nevzorov TWC? *In flight_plot, parameters* *Nevzerov TWC para 605* *2DC IWC para 1302* *2DP IWC para 1312*	N	**Use flight_plot to check data is present in mfd file? Y**

CLOUD PHYSICS PROCESSING LOG

Flight number: **B405**
Date of Flight: **24/09/08**

C) PCASP PROCESSING		
Processing Stage	Done?	Comments
1) Complete stage 7) in 2D processing Ensures Bnnn_FSP.DAT containing raw PCASP data is written to directory PMSDATA:	**Y**	
2) FLOODS> **RUN MRFB:[PMS.PCASP]PROCPCASP_NEW** a) Flight number: **Bnnn** b) File name: **PMSDATA:Bnnn_FSP.DAT** c) Root output name: **PMSDATA:Bnnn_PROCPCASP** Produces PMSDATA:Bnnn_PROCPCASP.DAT (binary) PMSDATA:Bnnn_PROCPCASP.OUT (ascii) d) Minimum size channel: *default = 1* *If smallest size channel are known to be noisy the value of the highest noise free channel to be entered here* e) Calibration volume flow rate: *Use the most recent value. (1.15ccs^{-1} Feb 07)* *Calibration files to be stored in **Exeter*** *Entering zero gives default value = 1.0 cm^{3}s^{-1}* f) Time correction: *Same value as used in 2D processing stage 9d* g) Start time: *0 if unknown* h) End time: *240000 if unknown*	**Y**	**Min size = 1** **Vol flow rate =** 0.82
3) FLOODS> **WAVE** i).WAVE> **write_procpcasp_to_m5, 'pmsdata:Bnnn_procpcasp.dat', 'pmsdata:Bnnn_m5procpcasp'** ii). WAVE> **exit**	**Y**	Use PVWAVE for this section
4) FLOODS> **MODIFY** a) Modifying datasets: **pmsdata:Bnnn_m5procpcasp** b) Dataset: **mfddata:Bnnn_tas_2d** c) New dataset: **mfddata:Bnnn_tas_2d_pcasp** d) Parameter description file: *leave blank to use default*	**Y**	**X =** **Y = X+1 =**
5) CHECKS Are PCASP and JW peaks synchronous? *In flight_plot, parameters* *Neph – total blue scatter.* *PCASP conc para 1550*	**N**	**Is data present in mfd? Y** Use flight_plot to check.

FAAM Dropsonde Flight Log

Flight No.	B405	**Date**	24/08/2008	**Operator**	Doug Anderson	**Page No.**	1 of 1

GMT	Sonde No.	Event eg land, splashdown	Comments pressure hPa, T deg C, RH %, wind direction deg, wind speed m/s, longitude, latitude, height m
09:45:24	1	Launch	344.30 -37.00 54.18 78.10 4.00 0.70 ***-0.991600 55.026700*** 8229.30
09:55:55	1	Splashdown	1030.33 13.40 999.00 29.25 8.58 -10.63 ***-1.069830 55.024859*** 99999.00
		TX to MetBD	00286 24-SEP-08 10:44:56 1010 Synoptic data bank Successful NV
			Pressure Surface Parameter override 1030.3 Surface alt unknown NOT ticked
09:48:54	2	Launch	344.20 -37.40 69.72 111.30 4.40 0.30 ***-1.002600 55.340100*** 8231.70
09:58:31	2	Splashdown	1030.83 12.76 90.11 26.95 6.54 -9.82 ***-1.071302 55.294353*** -257.99 Late winds, GPS not locked in pre drop so didn't lock in during drop until after the first 4000'.
		TX to MetBD	00299 24-SEP-08 11:53:34 951 Synoptic data bank Successful NV
			Pressure Surface Parameter override 1030.8 Surface alt unknown NOT ticked
09:51:39	3	Launch	344.30 -37.50 81.48 140.50 3.90 0.30 ***-1.001900 55.606100*** 8229.70
10:01:55	3	Splashdown	1030.72 13.07 77.40 37.05 7.97 -11.42 ***-1.061183 55.610764*** 99999.00
		TX to MetBD	00300 24-SEP-08 11:53:35 1034 Synoptic data bank Successful NV
			Pressure Surface Parameter override 1030.7 Surface alt unknown NOT ticked
09:54:27	4	Launch	344.10 -37.70 79.78 168.10 3.60 0.50 ***-1.001600 55.875000*** 8233.30
10:04:31	4	Splashdown	1030.75 13.37 68.74 49.13 6.03 -9.67 ***-1.049715 55.882234*** -250.01
		TX to MetBD	00301 24-SEP-08 11:53:37 1045 Synoptic data bank Successful NV
			Pressure Surface Parameter override 1030.8 Surface alt unknown NOT ticked
10:02:27	5	Launch	344.30 -37.70 79.00 140.50 6.90 0.50 ***-0.999500 55.98700*** 8229.70
10:12:33	5	Splashdown	1030.89 13.12 76.30 56.17 6.16 -9.75 ***-1.044829 55.999459*** 99999.00
		TX to MetBD	00330 24-SEP-08 13:52:02 1057 Synoptic data bank Successful NV
			1030.9 End drop time override Surface alt unknown NOT ticked
10:05:27	6	Launch	344.30 -37.60 78.16 132.80 7.10 0.50 ***-0.999000 55.716200*** 8229.60
10:15:46	6	Splashdown	1031.08 13.21 76.66 35.79 7.17 -10.91 ***-1.054383 55.725270*** 99999.00
		TX to MetBD	00302 24-SEP-08 11:53:38 1033 Synoptic data bank Successful NV
			Pressure Surface Parameter override 1031.1 Surface alt unknown NOT ticked
10:08:42	7	Launch	344.10 -37.40 66.85 122.60 8.40 0.50 ***-0.999200 55.427200*** 8234.60
10:19:13	7	Splashdown	1030.91 13.25 81.31 31.87 7.14 -10.51 ***-1.066678 55.430865*** 99999.00
		TX to MetBD	00303 24-SEP-08 11:53:39 998 Synoptic data bank Successful NV
			Pressure Surface Parameter override Surface alt unknown NOT ticked
10:11:33	8	Launch	344.30 -37.10 62.18 109.50 7.60 0.20 ***-0.999100 55.167600*** 8229.60
10:21:47	8	Splashdown	1031.07 13.40 84.76 31.74 6.49 -10.20 ***-1.071900 55.170700*** 99999.00
		TX to MetBD	00304 24-SEP-08 11:53:41 1009 Synoptic data bank Successful NV
			Pressure Surface Parameter override Surface alt unknown NOT ticked

P.S.A.P. Log

Flight no.**B**405... Date ..24 sept 2008.....
VACAR/VISURB

GMT	Filter Trans.	Flow Rate	B_a x 10^{-6}	Ph_det levels		Run	Remarks
Set to DRS time: done 054950Z	New filter Tr = 1.000 done	Set to 3.0 lpm: N/A	15.4	18	47	Ave =30 s	←Preflight
073000	1.0			18	45		Preflight OK
090900	1.0	2.1 at FL200		18	45		in transit and pump on.
093500	1.0	1.36 at FL270		18	45		in transit
105339	0.996	1,09		18	45	P1	pump off for cloud
110407	0.985	2.54					pump on
111020							pump off in cloud
111226		2.55				3650ft	pump on
111800							keeping pump off for sawtooth manouevres through cloud.
122630							pump on
131320	0.922						pump off for cloud
131600							pump on
133135	0.899	2.55 at 1000ft		16	45	R5.1	
141815							PSAP off on the ground

ARIES flight log

Flight: B405 | page 1 of 2

Date: 24/9/08 | Operator(s): S. NEWMAN | Res: 1 | Gain A: 2 B: 2

Loc./Notes: VACAR+VISURB, North Sea and E. coast

Scans: *either "[IGMs]X[co-adds]", or "[stop DRS time]" if in start/stop, or "[macro name]".* ***View:*** *mirror angle.*

DRS time	Flt ptrn	Scans	View	Shtr	HBB	CBB	Comments
073846	—	10.NZ30s	—	0	71	34	Pre-flight test
							Abort 074203
074223	—	4.Z3min	—	0	71	31	Further test abort 074629
091354	Transit	10.NZ30s	—	0	71	30	Cu/Sc below, looks clear above
	FL220						Abort 091715
094518	FL270	6.Z30s	—	0	71	31	Brief zenith view at start of run
	(R1.1)						Looks clear above, abort 094727
094747		9.N30s	—	0	71	31	Fairly uniform Sc below, few small breaks in it – thinning towards end of run it seems
							095601 abort at end of run
100030	R1.2	3.N3min	—	0	71	30	Overpass run – over mainly clear slot at very beginning
	FL270						100540 over fairly continuous Sc
							100800 more breaks (at least to starboard)
							101120 just a few breaks
							Abort 101421
114112	R2.1	6.Z30s	—	0	70	31	Brief zenith measurement, clear above
							114317
114328	"	3.N3min	—	0	71	31	Fairly uniform Sc below
							– Pretty thick throughout, odd small gap
							Abort 115723 for end of run
							Curious – appeared to restart? 1158
120326	R3.1	10.NZ30s	—	0	70	30	Below Sc layer, over ocean
	500ft						
120408	"	10.NZ30s	—	0	71	31	restart script, Sc fairly uniform above
121318	"	10.NZ30s	—	0	71	31	1213 script hung, restart
							Sea state quite calm, v. few whitecaps
							Abort 122029 for end of run
							– thinning above at very end?
124700	R4.1	10.NZ30s	—	0	70	31	Under patchy Sc.
	500ft						

ARIES flight log

Flight: B405 | page 2 of 2

Date: 24/9/08 | Operator(s): S. NEWMAN | Res: 1 | Gain A: 2 B: 2

Loc./Notes: VACAR+VISURB, N. Sea and E. Coast

Scans: *either "[IGMs]X[co-adds]", or "[stop DRS time]" if in start/stop, or "[macro name]".* ***View:*** *mirror angle.*

DRS time	Flt ptrn	Scans	View	Shtr	HBB	CBB	Comments
							125030 clear(er) above
							125110 coming under more cloud
							1253 fairly uniform Sc above
							1257 cloud thicker, precipitating, 2D reporting particles
							1259 getting clearer, stopped precip.
							130030 turning
							130340 v. close to coast
							130730 broken Sc above
							Abort 131021
131145	RS.1	10.N230s	—	0	71	31	Just below broken Sc at start
	1000ft						131640 fairly uniform Sc above
							1317 turning
							1320 turning; 2D droplet i.e. precip
							1323 visibility low due to precip
							1324 entering cloud
							133130 a few gaps in Sc above
							133320 clear(ish) above, past Sc edge
							Abort 133650

Wet Nephelometer Log

Flight No **B**405 Date 24/9/08 Operator's name: A. Wilson Page 1 of 2

GMT	Run	Height	Sample flow	Dry neph RH	Wet neph RH	Temp ramp	T_{water}	Remarks
090000	–							PREFLIGHT OK. DRY NEPH RH SEEMS HIGH THOUGH. COMMS OK
093500	TRANSIT	FL270	11.8	0	22.5	–	–	IN TRANSIT.
094400		FL270	11.8	0	21.9	–	–	AT HIGH LEVEL. WET NEPH NOT RECORDING. CHILLER NOT FILLED.
094522	R1	–"–	–"–	0	22.1	–	–	DROPSONDE LAUNCH & START OF R1
094825	"	"	"	"	21.3	–	–	SONDE 2 LAUNCH
095138	"	"	"	"	21.1	–	–	SONDE 3 LAUNCH
095423	"	"	12.2	"	20.9	–	–	SONDE 4 LAUNCH.
095544	R1	FL270	12.2	0	20.9	–	–	END R1
100223	R2	–"–	12.3	0	20.9	–	–	SONDE 5 LAUNCH / START R2
100524	–"–	–"–	12.0	0	20.9	–	–	SONDE 6
100840	–"–	–"–	–"–	–"–	20.7	–	–	SONDE 7
101128	–"–	–"–	12.1	–"–	20.5	–	–	SONDE 8
102012	R2/P1	FL270 ↘	12.4	0	20.4	–	–	END R2 / START P1 to 50ft
104800	P1	FL050	14.9	12.9	36	↘	38	WET NEPH SOFTWARE START. CHILLER FILLED. HEATER ON.
110230	P1	50ft	17.3	54.3	46.5	↘	12	end P1
110521	SAWTOOTH	300ft ↗	17.3	52	44	↗	9	Start Sawtooths ↗ 4750ft. SET RH TO ~85% & Hold.
	–"–	4750ft	13.8	20.7	79.6	↗	41	and back down.
111916	–"–	2650ft	15	42.2	87.6	→	42	and up
1122	–"–	4750ft	14.2	13.2	85.6	→	42	End sawtooths
112565	P3.2	–"– ↘	14.3	10.8	83.1	→	42	start Profile & descent.

Wet Nephelometer Log

Flight No **B** 405 Date 25/9/08 Operator's name: A. Wilson Page 2 of 2

GMT	Run	Height	Sample flow	Dry neph RH	Wet neph RH	Temp ramp	T_{water}	Remarks
113022	P3.2	2750FT	15	41.9	90.8	→	42	end Profile.
113324	P4.1	2750ft ↗	14.8	41.9	92.4	→	42	start P4.1 to 4750ft.
11	P4.1	4750ft	14.1	13.8	88.1	→	42	end P4.1
114129	R2.1	4750ft	14.0	9	86.6	↘	42	Start R2.1. Ramping down. 20 min SLR
115729	R2.1/P5.1	4750ft ↘	14.3	11.6	28.1	→	8	end R2.1. Start P5.1 to 500ft. Maintaining Low RH in Profile.
120359	P5.1/R3.1	500ft	13.3	47.1	40.9	↗	68	end Profile/start Run. Ramping RH up.
121320	-"-	-"-	~~13.3~~ 14.9	51.7	91.4	↘	45	Ramping down
122027	-"-	500ft ↗	14.8	58.2	67.6	↘	P1.2	end R3.1/start climb to FL100. Leave RH ramping down.
123355	P7.1	FL100				→	6.2	start P7.1 to 500ft
124132	-"-	2600ft						INTERRUPT P7.1
124321	-"-	-"- ↘	14.7	52.6	38	→	6.2	restart P7.1
124657	P7.1/R4.1	500ft	14.9	58.8	38.9	↗	62	end profile/start R4.1 @ 500ft. RH ramping up.
125630		500ft	14.8	62.4	93	↘	45	Ramping down
131008	R4.1	500ft	15.8	54.6	55.8	↘	10.1	end run/climbing to 1000ft for reciprocal run.
131150	R5.1	1000ft	15	52.0	53.3	↗	8.7	Start R5.1. Ramping RH up.
132040	R5.1	1000ft		52.3	93.4	↘	44.5	Ramping RH down.
132822	R5.1	-"-	14.8	54.9	65.9	↗	18.2	ramping up
133330	R5.1	1000ft	14.8	59.5	94.5	↘	44.6	Ramping down.
133647	R5.1	1000ft	14.8	57.9	83.7	↘	26	End R5.1. END of WET NEPH SCIENCE !

Microwave Radiometers FLIGHT LOG	Date	24/09/08	Flight	B405	log pages	3

Operator(s)	Pollard	Campaign	VACAR/ADIENT
Departure	Cranfield	Arrival	Cranfield

System start

MARSS

Visual pod inspection							X
Close 3 SSP circuit breakers							X
Close all MARSS circuit breakers							X
FERA on					at time	06:51	
Temperature controller initial temps	Ch16	15.7	Ch 17	15.6	Ch18	-20	15.1
Temperature controller set points		54°C		58°C			40°C
MARSS CPU on					at time	06:52	
Initial target temperatures	Hot	287.2			Cold	286.5	
Target heating							X
*** CHECK SCAN HEAD CLEAR ***							X
Scanning on (LMD box)					at time	06:52	
Scan indication			Monitor	›	Visual		X

Deimos

Deimos Orientation (Nadir or Zenith)							Z
Close all Deimos circuit breakers							X
Turn on Deimos CPU							X
*** CHECK SCAN HEAD CLEAR ***							X
Start Deimos Software					at time	06:53	
Initial target temperatures	Hot	287.2			Cold	286.5	
Target heating							X
Scan indication			Monitor	›	Visual		X
Weather	Cloud				Precip		
	Surface				Pressure		
	Other						

System functionality check

(after initial system warmup, approx 1 hour)

PC to DRS Time error	$t_{PC}=t_{DRS}$ +	0	at time	08:39		
Brightness temps 'sensible'						
Target temps MARSS:	Hot	343.77	Cold	288.37		
Target temps Deimos:	Hot	344.12	Cold	288.32		

Channel gains 'sensible'	Ch1 A (-)	Ch3 A (-)	Ch1 B (-)	Ch3 B (-)	
	55.0	15.9	54.4	14.9	
	Ch16 (40-44)	Ch17 (45-49)	Ch18 (40-44)	Ch19 (40-44)	Ch20 (44-48)
	39.58	32.64	38.01	41.78	43.21

Power changeover

Headset on before start		
Listen to engine start sequence	4, 3, 2, 1.	
LMD off (3 switches, bottom to top)		
Exit Deimos Software (x)		
POWER CHANGEOVER		
LMD on (3 switches, top to bottom)	then pushbutton	
Restart Deimos Software		
System running again	at time	

Flight #	B405	Date	24/09/08	Operator(s)	Pollard	log page	2	of	3

Time	**Run id**	**Alt/FL**	*Remarks*	**Sys**
06:58			Scanner off	
08:00			Scanner on for a sanity check	
08:05			Scanner off	
08:39			Clocks reset, MARSS had been on BST until now	
10:14			Deimos really not responding to anything	
10:16			Clocks reset, MARSS + 3 s, Deimos – 0.5 s	
12:57			Precip signal seen on 16, 17 in zenith.	
13:18			Another precip event	
13:47			ENDEX, Instruments off	
			MARSS +7s, Deimos +0s	

Flight #	B405	Date	24/09/08	Operator(s)	Pollard	log page	3	of	3

Time	**Run id**	**Alt/FL**	*Remarks*	**Sys**

Data Processing Log		Initials	Date
Flight data copied from MARSS/Deimos PC flash disk to Martian C:\Bxxx\			
Check disc space on flash disk (need >~10 MB free)			
Copy* Martian logged data from to C:\Bxxx\			
Wave processing run and BT files generated			
DQM file generated and uploaded			
NetCDF file generated and uploaded			
C:\Bxxx\ copied to USB drive or CD			
Data processing issues/notes:			

B405_SWS_SHIMS_EventLog.txt

```
07:19:09.22  ---      -     -     -     -
07:19:09.22  ---      -     -     -     -  +++ SOFTWARE START/RESTART +++
07:19:09.22  ---      -     -     -     -  +++ hh:mm:ss.ff / Instr / Posn / Period /
tVIS/ tNIR / Comment +++
07:19:09.22  ---      -     -     -     -  +++ Flight no. B405
07:19:09.22  ---      -     -     -     -
07:19:12.23  SWS      -   100     -     -  Sample period changed from 250ms to 100ms.
07:19:15.56  SWS      -     -    10     -  VIS int.time changed from 5ms to 10ms.
07:19:16.24  SWS      -     -     -    10  NIR int.time changed from 5ms to 10ms.
07:19:18.68  USH      -     -     -     5  NIR int.time changed from 5ms to 5ms.
07:19:20.59  USH      -     -    10     -  VIS int.time changed from 5ms to 10ms.
07:19:20.60  USH      -     -     -    10  NIR int.time changed from 5ms to 10ms.
07:19:22.11  USH      -   100     -     -  Sample period changed from 250ms to 100ms.
07:19:23.29  LSH      -     -     -     5  NIR int.time changed from 5ms to 5ms.
07:19:24.53  LSH      -     -    10     -  VIS int.time changed from 5ms to 10ms.
07:19:24.53  LSH      -     -     -    10  NIR int.time changed from 5ms to 10ms.
07:19:25.84  LSH      -   100     -     -  Sample period changed from 250ms to 100ms.
07:19:32.15  SWS      -     -     -     -  Telescope motor initialised.
07:19:34.90  SWS    0.0     -     -     -  Telescope sent to -6.000
07:19:35.45  SWS   -6.0     -     -     -  Telescope stopped.
07:19:35.71  SWS      -     -     -     -  Initialization: VIS OK NIR OK
07:19:35.80  USH      -     -     -     -  Initialization: VIS OK NIR OK
07:19:35.91  LSH      -     -     -     -  Initialization: VIS OK NIR OK
07:19:45.25  USH      -     -     -     -  Manual scene recording started.
07:19:45.25  LSH      -     -     -     -  Manual scene recording started.
07:19:45.25  SWS      -     -     -     -  Manual scene recording started.
07:19:53.95  SWS      -     -     -     -  Idling
07:19:53.97  LSH      -     -     -     -  Idling
07:19:53.98  USH      -     -     -     -  Idling
07:35:40.94  USH      -     -     -     -  Manual scene recording started.
07:35:40.94  LSH      -     -     -     -  Manual scene recording started.
07:35:40.95  SWS      -     -     -     -  Manual scene recording started.
07:35:45.78  USH      -     -    50     -  VIS int.time changed from 10ms to 50ms.
07:35:45.79  USH      -     -     -    50  NIR int.time changed from 10ms to 50ms.
07:35:48.44  LSH      -     -    50     -  VIS int.time changed from 10ms to 50ms.
07:35:48.44  LSH      -     -     -    50  NIR int.time changed from 10ms to 50ms.
07:36:16.59  ---      -     -     -     -  Reset shutters.
07:36:24.95  SWS      -     -     -     -  Dark measurement started.
07:36:25.51  SWS      -     -     -     -  Manual scene recording started.
07:36:27.27  USH      -     -     -     -  Dark measurement started.
07:36:28.21  USH      -     -     -     -  Manual scene recording started.
07:36:29.16  LSH      -     -     -     -  Dark measurement started.
07:36:30.09  LSH      -     -     -     -  Manual scene recording started.
07:36:32.45  LSH      -     -     -     -  Dark measurement started.
07:36:33.40  LSH      -     -     -     -  Manual scene recording started.
07:36:35.37  USH      -     -     -     -  Dark measurement started.
07:36:36.33  USH      -     -     -     -  Manual scene recording started.
07:36:37.58  SWS      -     -     -     -  Dark measurement started.
07:36:38.12  SWS      -     -     -     -  Manual scene recording started.
07:36:39.83  USH      -     -     -     -  Dark measurement started.
07:36:40.78  USH      -     -     -     -  Manual scene recording started.
07:36:42.13  LSH      -     -     -     -  Dark measurement started.
07:36:43.07  LSH      -     -     -     -  Manual scene recording started.
07:36:45.74  USH      -     -     -     -  Dark measurement started.
07:36:46.71  USH      -     -     -     -  Manual scene recording started.
07:36:47.34  SWS      -     -     -     -  Dark measurement started.
07:36:47.88  SWS      -     -     -     -  Manual scene recording started.
07:36:54.35  SWS      -     -     -     -  Idling
07:36:54.44  LSH      -     -     -     -  Idling
07:36:54.44  USH      -     -     -     -  Idling
07:53:26.23  SWS      -     -     -     -  Manual scene recording started.
07:53:26.24  LSH      -     -     -     -  Manual scene recording started.
07:53:26.24  USH      -     -     -     -  Manual scene recording started.
07:54:13.50  ---      -     -     -     -  Reset shutters.
07:56:54.77  LSH      -     -     -     -  Dark measurement started.
07:56:55.76  LSH      -     -     -     -  Manual scene recording started.
07:56:56.67  USH      -     -     -     -  Dark measurement started.
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07:56:57.61  USH      -     -     -     -  Manual scene recording started.
07:56:58.63  SWS      -     -     -     -  Dark measurement started.
07:56:59.17  SWS      -     -     -     -  Manual scene recording started.
07:57:08.53  SWS      -     -    30     -  VIS int.time changed from 10ms to 30ms.
07:57:08.53  SWS      -     -     -    30  NIR int.time changed from 10ms to 30ms.
07:57:13.45  SWS      -     -     -     -  Dark measurement started.
07:57:14.19  SWS      -     -     -     -  Manual scene recording started.
07:57:15.51  SWS      -     -     -     -  Dark measurement started.
07:57:16.25  SWS      -     -     -     -  Manual scene recording started.
07:57:18.06  USH      -     -     -     -  Idling
07:57:18.07  LSH      -     -     -     -  Idling
07:57:18.09  SWS      -     -     -     -  Idling
07:57:18.12  SWS      -     -     -     -  Idling
08:30:07.44  USH      -     -     -     -  Manual scene recording started.
08:30:07.45  LSH      -     -     -     -  Manual scene recording started.
08:30:07.45  SWS      -     -     -     -  Manual scene recording started.
08:30:16.45  ---      -     -     -     -  *** 9 deg C
08:30:31.47  USH      -     -     -     -  Dark measurement started.
08:30:32.41  USH      -     -     -     -  Manual scene recording started.
08:30:33.27  SWS      -     -     -     -  Dark measurement started.
08:30:34.04  SWS      -     -     -     -  Manual scene recording started.
08:30:35.49  LSH      -     -     -     -  Dark measurement started.
08:30:36.43  LSH      -     -     -     -  Manual scene recording started.
08:30:37.61  LSH      -     -     -     -  Dark measurement started.
08:30:38.57  LSH      -     -     -     -  Manual scene recording started.
08:31:56.81  SWS      -     -     -     -  Dark measurement started.
08:31:57.56  SWS      -     -     -     -  Manual scene recording started.
08:31:58.26  USH      -     -     -     -  Dark measurement started.
08:31:59.25  USH      -     -     -     -  Manual scene recording started.
08:31:59.94  LSH      -     -     -     -  Dark measurement started.
08:32:00.89  LSH      -     -     -     -  Manual scene recording started.
08:32:03.86  SWS      -     -     -     -  Idling
08:32:03.87  LSH      -     -     -     -  Idling
08:32:03.88  USH      -     -     -     -  Idling
08:38:47.13  ---      -     -     -     -  *** 8 deg
08:43:53.05  SWS      -     -     -     -  Manual scene recording started.
08:43:53.05  LSH      -     -     -     -  Manual scene recording started.
08:43:53.05  USH      -     -     -     -  Manual scene recording started.
08:43:56.04  ---      -     -     -     -  Reset shutters.
08:44:00.53  USH      -     -     -     -  Dark measurement started.
08:44:01.50  USH      -     -     -     -  Manual scene recording started.
08:44:02.23  SWS      -     -     -     -  Dark measurement started.
08:44:03.00  SWS      -     -     -     -  Manual scene recording started.
08:44:03.95  LSH      -     -     -     -  Dark measurement started.
08:44:04.90  LSH      -     -     -     -  Manual scene recording started.
08:44:05.96  LSH      -     -     -     -  Dark measurement started.
08:44:06.91  LSH      -     -     -     -  Manual scene recording started.
08:48:11.58  SWS   -6.0     -     -     -  Telescope sent to 105.353
08:48:12.72  SWS  105.3     -     -     -  Telescope stopped.
08:59:59.88  SWS  105.4     -     -     -  Telescope sent to -6.000
09:00:01.01  SWS   -4.7     -     -     -  Telescope stopped.
09:00:04.03  SWS      -     -     -     -  Dark measurement started.
09:00:04.77  SWS      -     -     -     -  Manual scene recording started.
09:00:05.48  USH      -     -     -     -  Dark measurement started.
09:00:06.44  USH      -     -     -     -  Manual scene recording started.
09:00:07.22  LSH      -     -     -     -  Dark measurement started.
09:00:08.16  LSH      -     -     -     -  Manual scene recording started.
09:00:14.91  LSH      -     -     -     -  Dark measurement started.
09:00:15.92  LSH      -     -     -     -  Manual scene recording started.
09:00:18.85  LSH      -     -     -     -  Dark measurement started.
09:00:19.80  LSH      -     -     -     -  Manual scene recording started.
09:00:49.13  ---      -     -     -     -  *** cooler at 7 deg
09:08:39.17  SWS      -     -     -     -  Dark measurement started.
09:08:39.94  SWS      -     -     -     -  Manual scene recording started.
09:08:40.85  USH      -     -     -     -  Dark measurement started.
09:08:41.80  USH      -     -     -     -  Manual scene recording started.
09:08:42.48  LSH      -     -     -     -  Dark measurement started.
09:08:43.42  LSH      -     -     -     -  Manual scene recording started.
09:08:45.80  LSH      -     -     -     -  Dark measurement started.
```

09:08:46.80	LSH	-	-	-	-	Manual scene recording started.
09:08:50.06	USH	-	-	-	-	Dark measurement started.
09:08:51.01	USH	-	-	-	-	Manual scene recording started.
09:08:51.78	SWS	-	-	-	-	Dark measurement started.
09:08:52.56	SWS	-	-	-	-	Manual scene recording started.
09:15:27.83	---	-	-	-	-	*** 6 deg
09:28:06.35	SWS	-	-	40	-	VIS int.time changed from 30ms to 40ms.
09:28:06.35	SWS	-	-	-	40	NIR int.time changed from 30ms to 40ms.
09:28:08.70	SWS	-	-	-	-	Dark measurement started.
09:28:09.55	SWS	-	-	-	-	Manual scene recording started.
09:28:11.75	USH	-	-	40	-	VIS int.time changed from 50ms to 40ms.
09:28:11.75	USH	-	-	-	40	NIR int.time changed from 50ms to 40ms.
09:28:13.32	USH	-	-	-	-	Dark measurement started.
09:28:14.19	USH	-	-	-	-	Manual scene recording started.
09:28:15.92	LSH	-	-	40	-	VIS int.time changed from 50ms to 40ms.
09:28:15.93	LSH	-	-	-	40	NIR int.time changed from 50ms to 40ms.
09:28:17.33	LSH	-	-	-	-	Dark measurement started.
09:28:18.17	LSH	-	-	-	-	Manual scene recording started.
09:28:19.89	SWS	-	-	-	-	Dark measurement started.
09:28:20.74	SWS	-	-	-	-	Manual scene recording started.
09:28:21.76	USH	-	-	-	-	Dark measurement started.
09:28:22.66	USH	-	-	-	-	Manual scene recording started.
09:28:23.32	LSH	-	-	-	-	Dark measurement started.
09:28:24.18	LSH	-	-	-	-	Manual scene recording started.
09:43:15.51	SWS	-6.0	-	-	-	Telescope sent to 174.000
09:43:17.20	SWS	171.2	-	-	-	Telescope stopped.
09:43:31.87	SWS	-	-	-	-	Dark measurement started.
09:43:32.76	SWS	-	-	-	-	Manual scene recording started.
09:43:33.31	USH	-	-	-	-	Dark measurement started.
09:43:34.22	USH	-	-	-	-	Manual scene recording started.
09:43:37.74	LSH	-	-	-	-	Dark measurement started.
09:43:38.62	LSH	-	-	-	-	Manual scene recording started.
09:43:55.87	SWS	-	-	-	-	Dark measurement started.
09:43:56.78	SWS	-	-	-	-	Manual scene recording started.
09:43:57.70	USH	-	-	-	-	Dark measurement started.
09:43:58.56	USH	-	-	-	-	Manual scene recording started.
09:43:59.11	LSH	-	-	-	-	Dark measurement started.
09:43:59.97	LSH	-	-	-	-	Manual scene recording started.
09:45:27.80	---	-	-	-	-	*** run 1
09:45:46.54	USH	-	-	-	-	Dark measurement started.
09:45:47.39	USH	-	-	-	-	Manual scene recording started.
09:45:49.49	LSH	-	-	-	-	Dark measurement started.
09:45:50.34	LSH	-	-	-	-	Manual scene recording started.
09:45:52.06	SWS	-	-	-	-	Dark measurement started.
09:45:52.97	SWS	-	-	-	-	Manual scene recording started.
09:48:00.95	SWS	-	-	-	-	Dark measurement started.
09:48:01.83	SWS	-	-	-	-	Manual scene recording started.
09:48:02.63	USH	-	-	-	-	Dark measurement started.
09:48:03.48	USH	-	-	-	-	Manual scene recording started.
09:48:04.39	LSH	-	-	-	-	Dark measurement started.
09:48:05.84	LSH	-	-	-	-	Manual scene recording started.
09:50:39.43	SWS	-	-	-	-	Dark measurement started.
09:50:40.30	SWS	-	-	-	-	Manual scene recording started.
09:50:41.25	USH	-	-	-	-	Dark measurement started.
09:50:42.10	USH	-	-	-	-	Manual scene recording started.
09:50:43.27	LSH	-	-	-	-	Dark measurement started.
09:50:44.15	LSH	-	-	-	-	Manual scene recording started.
09:52:26.63	---	-	-	-	-	*** 5 deg
09:52:53.19	SWS	-	-	-	-	Dark measurement started.
09:52:54.04	SWS	-	-	-	-	Manual scene recording started.
09:52:56.25	USH	-	-	-	-	Dark measurement started.
09:52:57.15	USH	-	-	-	-	Manual scene recording started.
09:52:58.58	LSH	-	-	-	-	Dark measurement started.
09:52:59.43	LSH	-	-	-	-	Manual scene recording started.
09:58:11.03	SWS	-	-	-	-	Dark measurement started.
09:58:11.92	SWS	-	-	-	-	Manual scene recording started.
09:58:12.79	USH	-	-	-	-	Dark measurement started.
09:58:13.73	USH	-	-	-	-	Manual scene recording started.
09:58:14.07	USH	-	-	-	-	Manual scene recording started.

09:58:17.96	---	-	-	-	-	Reset shutters.
09:58:23.17	LSH	-	-	-	-	Idling
09:58:23.20	SWS	-	-	-	-	Idling
09:58:23.23	USH	-	-	-	-	Idling
09:58:24.46	SWS	-	-	-	-	Manual scene recording started.
09:58:24.46	LSH	-	-	-	-	Manual scene recording started.
09:58:24.46	USH	-	-	-	-	Manual scene recording started.
09:58:26.47	LSH	-	-	-	-	Dark measurement started.
09:58:27.32	LSH	-	-	-	-	Manual scene recording started.
09:58:28.34	USH	-	-	-	-	Dark measurement started.
09:58:29.23	USH	-	-	-	-	Manual scene recording started.
09:58:29.90	SWS	-	-	-	-	Dark measurement started.
09:58:30.78	SWS	-	-	-	-	Manual scene recording started.
10:02:50.92	---	-	-	-	-	*** clear skies below, crossed edge of clouds
10:02:56.23	---	-	-	-	-	*** 5 deg
10:05:17.73	LSH	-	-	-	-	Dark measurement started.
10:05:18.60	LSH	-	-	-	-	Manual scene recording started.
10:05:19.67	USH	-	-	-	-	Dark measurement started.
10:05:20.52	USH	-	-	-	-	Manual scene recording started.
10:05:22.29	SWS	-	-	-	-	Dark measurement started.
10:05:23.19	SWS	-	-	-	-	Manual scene recording started.
10:08:39.59	SWS	-	-	-	-	Dark measurement started.
10:08:40.44	SWS	-	-	-	-	Manual scene recording started.
10:08:41.13	USH	-	-	-	-	Dark measurement started.
10:08:42.04	USH	-	-	-	-	Manual scene recording started.
10:08:42.93	LSH	-	-	-	-	Dark measurement started.
10:08:43.80	LSH	-	-	-	-	Manual scene recording started.
10:08:59.49	---	-	-	-	-	*** noise in LSH VIS
10:10:08.23	LSH	-	-	-	-	Dark measurement started.
10:10:09.15	LSH	-	-	-	-	Manual scene recording started.
10:10:10.48	LSH	-	-	-	-	Dark measurement started.
10:10:11.34	LSH	-	-	-	-	Manual scene recording started.
10:10:13.40	---	-	-	-	-	Reset shutters.
10:10:16.79	USH	-	-	-	-	Dark measurement started.
10:10:17.67	USH	-	-	-	-	Manual scene recording started.
10:10:18.59	SWS	-	-	-	-	Dark measurement started.
10:10:19.46	SWS	-	-	-	-	Manual scene recording started.
10:10:20.99	LSH	-	-	-	-	Dark measurement started.
10:10:21.88	LSH	-	-	-	-	Manual scene recording started.
10:10:22.74	USH	-	-	-	-	Dark measurement started.
10:10:23.61	USH	-	-	-	-	Manual scene recording started.
10:10:28.35	USH	-	-	-	-	Idling
10:10:28.43	LSH	-	-	-	-	Idling
10:10:28.45	SWS	-	-	-	-	Idling
10:10:29.75	SWS	-	-	-	-	Manual scene recording started.
10:10:29.75	LSH	-	-	-	-	Manual scene recording started.
10:10:29.77	USH	-	-	-	-	Manual scene recording started.
10:10:31.47	SWS	-	-	-	-	Dark measurement started.
10:10:32.32	SWS	-	-	-	-	Manual scene recording started.
10:10:33.31	USH	-	-	-	-	Dark measurement started.
10:10:34.16	USH	-	-	-	-	Manual scene recording started.
10:10:35.27	LSH	-	-	-	-	Dark measurement started.
10:10:36.14	LSH	-	-	-	-	Manual scene recording started.
10:12:57.06	LSH	-	-	-	-	Dark measurement started.
10:12:57.95	LSH	-	-	-	-	Manual scene recording started.
10:12:59.18	USH	-	-	-	-	Dark measurement started.
10:13:00.07	USH	-	-	-	-	Manual scene recording started.
10:13:00.94	SWS	-	-	-	-	Dark measurement started.
10:13:01.82	SWS	-	-	-	-	Manual scene recording started.
10:15:59.41	SWS	-	-	-	-	Dark measurement started.
10:16:00.29	SWS	-	-	-	-	Manual scene recording started.
10:16:01.01	USH	-	-	-	-	Dark measurement started.
10:16:01.90	USH	-	-	-	-	Manual scene recording started.
10:16:03.13	LSH	-	-	-	-	Dark measurement started.
10:16:04.02	LSH	-	-	-	-	Manual scene recording started.
10:17:20.02	SWS	-	-	-	-	Dark measurement started.
10:17:20.92	SWS	-	-	-	-	Manual scene recording started.
10:17:21.93	USH	-	-	-	-	Dark measurement started.
10:17:22.88	USH	-	-	-	-	Manual scene recording started.

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10:17:23.88  LSH      -     -     -     -  Dark measurement started.
10:17:24.77  LSH      -     -     -     -  Manual scene recording started.
10:19:39.92  SWS      -     -     -     -  Dark measurement started.
10:19:40.82  SWS      -     -     -     -  Manual scene recording started.
10:19:41.74  USH      -     -     -     -  Dark measurement started.
10:19:42.60  USH      -     -     -     -  Manual scene recording started.
10:19:43.38  LSH      -     -     -     -  Dark measurement started.
10:19:44.30  LSH      -     -     -     -  Manual scene recording started.
10:19:57.52  ---      -     -     -     -  *** freezer at 5 deg C
10:20:14.11  ---      -     -     -     -  *** profile descent from point A to point B
10:20:25.13  SWS      -     -     -     -  Dark measurement started.
10:20:26.02  SWS      -     -     -     -  Manual scene recording started.
10:20:27.07  USH      -     -     -     -  Dark measurement started.
10:20:27.95  USH      -     -     -     -  Manual scene recording started.
10:20:28.63  LSH      -     -     -     -  Dark measurement started.
10:20:29.48  LSH      -     -     -     -  Manual scene recording started.
10:20:36.61  ---      -     -     -     -  *** profile 1
10:24:16.70  ---      -     -     -     -  *** cloud below
10:29:31.24  SWS      -     -     -     -  Dark measurement started.
10:29:32.09  SWS      -     -     -     -  Manual scene recording started.
10:29:32.69  USH      -     -     -     -  Dark measurement started.
10:29:33.56  USH      -     -     -     -  Manual scene recording started.
10:29:34.25  LSH      -     -     -     -  Dark measurement started.
10:29:35.11  LSH      -     -     -     -  Manual scene recording started.
10:32:32.50  ---      -     -     -     -  *** continueing profile descent from point B
to point A
10:36:51.58  ---      -     -     -     -  *** restart of profile 1  now
10:37:00.14  SWS      -     -     -     -  Dark measurement started.
10:37:01.04  SWS      -     -     -     -  Manual scene recording started.
10:37:01.92  USH      -     -     -     -  Dark measurement started.
10:37:02.79  USH      -     -     -     -  Manual scene recording started.
10:37:03.50  LSH      -     -     -     -  Dark measurement started.
10:37:04.38  LSH      -     -     -     -  Manual scene recording started.
10:43:30.24  SWS      -     -     -     -  Dark measurement started.
10:43:31.11  SWS      -     -     -     -  Manual scene recording started.
10:43:31.85  USH      -     -     -     -  Dark measurement started.
10:43:32.75  USH      -     -     -     -  Manual scene recording started.
10:43:32.91  LSH      -     -     -     -  Dark measurement started.
10:43:33.81  LSH      -     -     -     -  Manual scene recording started.
10:47:25.53  ---      -     -     -     -  *** interupting prirofile at 5000 ft
10:47:49.75  ---      -     -     -     -  *** interrupting now and return for reciprocal
run
10:51:59.83  ---      -     -     -     -  *** recomence profile descending at 500 ft per
min
10:52:03.28  SWS      -     -     -     -  Dark measurement started.
10:52:04.19  SWS      -     -     -     -  Manual scene recording started.
10:52:04.79  USH      -     -     -     -  Dark measurement started.
10:52:05.65  USH      -     -     -     -  Manual scene recording started.
10:52:06.16  LSH      -     -     -     -  Dark measurement started.
10:52:07.07  LSH      -     -     -     -  Manual scene recording started.
10:54:13.77  ---      -     -     -     -  *** enetering cloud
10:54:31.38  ---      -     -     -     -  *** in cloud
10:57:35.05  SWS      -     -     -     -  Dark measurement started.
10:57:35.92  SWS      -     -     -     -  Manual scene recording started.
10:57:37.12  USH      -     -     -     -  Dark measurement started.
10:57:38.02  USH      -     -     -     -  Manual scene recording started.
10:57:39.30  LSH      -     -     -     -  Dark measurement started.
10:57:40.23  LSH      -     -     -     -  Manual scene recording started.
11:00:22.08  SWS      -     -     -     -  Dark measurement started.
11:00:22.96  SWS      -     -     -     -  Manual scene recording started.
11:00:23.86  USH      -     -     -     -  Dark measurement started.
11:00:24.77  USH      -     -     -     -  Manual scene recording started.
11:00:25.95  LSH      -     -     -     -  Dark measurement started.
11:00:26.86  LSH      -     -     -     -  Manual scene recording started.
11:02:34.84  ---      -     -     -     -  *** end of profile descent at 50 ft at point B
11:05:22.94  SWS      -     -     -     -  Dark measurement started.
11:05:23.83  SWS      -     -     -     -  Manual scene recording started.
11:05:24.99  USH      -     -     -     -  Dark measurement started.
11:05:25.89  USH      -     -     -     -  Manual scene recording started.
```

```
11:05:26.61  LSH      -     -     -     -  Dark measurement started.
11:05:27.50  LSH      -     -     -     -  Manual scene recording started.
11:05:30.92  ---      -     -     -     -  *** sawtootjh
11:05:59.39  ---      -     -     -     -  *** that was start of sawtooth (profile 2.1)
from 300 ft
11:08:46.25  ---      -     -     -     -  *** freezer at 5 deg still
11:11:52.03  ---      -     -     -     -  *** going through cloud
11:14:16.95  USH      -     -     -     -  Idling
11:14:16.97  SWS      -     -     -     -  Idling
11:14:17.00  LSH      -     -     -     -  Idling
11:14:18.98  SWS  174.0     -     -     -  Telescope sent to -6.000
11:14:20.73  SWS   -5.8     -     -     -  Telescope stopped.
11:14:21.45  SWS      -     -     -     -  Manual scene recording started.
11:14:21.46  LSH      -     -     -     -  Manual scene recording started.
11:14:21.48  USH      -     -     -     -  Manual scene recording started.
11:14:24.81  SWS      -     -     -     -  Dark measurement started.
11:14:25.67  SWS      -     -     -     -  Manual scene recording started.
11:14:26.34  USH      -     -     -     -  Dark measurement started.
11:14:27.23  USH      -     -     -     -  Manual scene recording started.
11:14:27.59  LSH      -     -     -     -  Dark measurement started.
11:14:28.46  LSH      -     -     -     -  Manual scene recording started.
11:14:47.35  ---      -     -     -     -  *** profile 2.2 descending to below cloud base
11:16:41.67  ---      -     -     -     -  *** going through cloud
11:22:07.86  ---      -     -     -     -  *** point alpha
11:22:47.48  SWS      -     -     -     -  Idling
11:22:47.50  LSH      -     -     -     -  Idling
11:22:47.52  USH      -     -     -     -  Idling
11:22:49.83  SWS   -6.0     -     -     -  Telescope sent to 174.000
11:22:51.57  SWS  173.8     -     -     -  Telescope stopped.
11:22:53.05  SWS      -     -     -     -  Manual scene recording started.
11:22:53.05  LSH      -     -     -     -  Manual scene recording started.
11:22:53.07  USH      -     -     -     -  Manual scene recording started.
11:22:56.79  SWS      -     -     -     -  Dark measurement started.
11:22:57.66  SWS      -     -     -     -  Manual scene recording started.
11:22:58.45  USH      -     -     -     -  Dark measurement started.
11:22:59.39  USH      -     -     -     -  Manual scene recording started.
11:22:59.72  USH      -     -     -     -  Manual scene recording started.
11:23:00.29  LSH      -     -     -     -  Dark measurement started.
11:23:01.17  LSH      -     -     -     -  Manual scene recording started.
11:29:08.11  SWS      -     -     -     -  Dark measurement started.
11:29:09.02  SWS      -     -     -     -  Manual scene recording started.
11:29:09.87  USH      -     -     -     -  Dark measurement started.
11:29:10.72  USH      -     -     -     -  Manual scene recording started.
11:29:12.71  LSH      -     -     -     -  Dark measurement started.
11:29:13.57  LSH      -     -     -     -  Manual scene recording started.
11:30:51.71  LSH      -     -     -     -  Dark measurement started.
11:30:52.61  LSH      -     -     -     -  Manual scene recording started.
11:30:53.64  USH      -     -     -     -  Dark measurement started.
11:30:54.52  USH      -     -     -     -  Manual scene recording started.
11:30:56.30  SWS      -     -     -     -  Dark measurement started.
11:30:57.19  SWS      -     -     -     -  Manual scene recording started.
11:35:04.31  ---      -     -     -     -  *** freezer at 4 deg
11:35:15.75  ---      -     -     -     -  *** 5 deg
11:38:32.04  ---      -     -     -     -  *** end of sawtooth at point A
11:41:27.06  ---      -     -     -     -  *** run from a to b above cloud tops
11:41:43.91  ---      -     -     -     -  *** run 2.1
11:41:49.40  LSH      -     -     -     -  Dark measurement started.
11:41:50.34  LSH      -     -     -     -  Manual scene recording started.
11:41:50.81  USH      -     -     -     -  Dark measurement started.
11:41:51.70  USH      -     -     -     -  Manual scene recording started.
11:41:52.80  SWS      -     -     -     -  Dark measurement started.
11:41:53.70  SWS      -     -     -     -  Manual scene recording started.
11:45:17.07  SWS      -     -     -     -  Dark measurement started.
11:45:17.95  SWS      -     -     -     -  Manual scene recording started.
11:45:19.88  USH      -     -     -     -  Dark measurement started.
11:45:20.75  USH      -     -     -     -  Manual scene recording started.
11:45:22.00  LSH      -     -     -     -  Dark measurement started.
11:45:22.89  LSH      -     -     -     -  Manual scene recording started.
11:45:39.65  LSH      -     -     -     -  Dark measurement started.
```

```
11:45:41.11  LSH      -     -     -     -  Manual scene recording started.
11:45:41.30  USH      -     -     -     -  Dark measurement started.
11:45:42.20  USH      -     -     -     -  Manual scene recording started.
11:45:43.19  SWS      -     -     -     -  Dark measurement started.
11:45:44.08  SWS      -     -     -     -  Manual scene recording started.
11:52:39.19  SWS      -     -     -     -  Dark measurement started.
11:52:40.09  SWS      -     -     -     -  Manual scene recording started.
11:52:41.13  USH      -     -     -     -  Dark measurement started.
11:52:42.03  USH      -     -     -     -  Manual scene recording started.
11:52:42.80  LSH      -     -     -     -  Dark measurement started.
11:52:43.70  LSH      -     -     -     -  Manual scene recording started.
11:57:21.57  ---      -     -     -     -  *** end of run, descent
11:57:35.64  SWS      -     -     -     -  Idling
11:57:35.65  LSH      -     -     -     -  Idling
11:57:35.66  USH      -     -     -     -  Idling
11:57:38.23  SWS  174.0     -     -     -  Telescope sent to -6.000
11:57:40.00  SWS   -5.9     -     -     -  Telescope stopped.
11:57:41.31  SWS      -     -     -     -  Manual scene recording started.
11:57:41.32  LSH      -     -     -     -  Manual scene recording started.
11:57:41.33  USH      -     -     -     -  Manual scene recording started.
11:57:43.50  SWS      -     -     -     -  Dark measurement started.
11:57:44.38  SWS      -     -     -     -  Manual scene recording started.
11:57:47.52  USH      -     -     -     -  Dark measurement started.
11:57:48.39  USH      -     -     -     -  Manual scene recording started.
11:57:50.23  LSH      -     -     -     -  Dark measurement started.
11:57:51.13  LSH      -     -     -     -  Manual scene recording started.
12:01:58.29  SWS      -     -     -     -  Dark measurement started.
12:01:59.20  SWS      -     -     -     -  Manual scene recording started.
12:02:01.00  USH      -     -     -     -  Dark measurement started.
12:02:01.94  USH      -     -     -     -  Manual scene recording started.
12:02:03.74  LSH      -     -     -     -  Dark measurement started.
12:02:04.60  LSH      -     -     -     -  Manual scene recording started.
12:04:00.55  ---      -     -     -     -  *** run at 500 ft from point B
12:04:07.31  ---      -     -     -     -  *** freezer at 4 deg
12:04:28.73  USH      -     -     -     -  Dark measurement started.
12:04:29.60  USH      -     -     -     -  Manual scene recording started.
12:04:30.61  LSH      -     -     -     -  Dark measurement started.
12:04:31.51  LSH      -     -     -     -  Manual scene recording started.
12:04:35.30  SWS      -     -     -     -  Dark measurement started.
12:04:36.20  SWS      -     -     -     -  Manual scene recording started.
12:11:43.03  SWS      -     -     -     -  Dark measurement started.
12:11:43.88  SWS      -     -     -     -  Manual scene recording started.
12:11:44.76  USH      -     -     -     -  Dark measurement started.
12:11:45.62  USH      -     -     -     -  Manual scene recording started.
12:11:46.51  LSH      -     -     -     -  Dark measurement started.
12:11:47.40  LSH      -     -     -     -  Manual scene recording started.
12:20:29.30  ---      -     -     -     -  *** ed of run
12:20:36.93  ---      -     -     -     -  *** start of profile climb
12:23:55.62  SWS      -     -     -     -  Dark measurement started.
12:23:56.55  SWS      -     -     -     -  Manual scene recording started.
12:23:57.82  USH      -     -     -     -  Dark measurement started.
12:23:58.68  USH      -     -     -     -  Manual scene recording started.
12:23:59.81  LSH      -     -     -     -  Dark measurement started.
12:24:00.68  LSH      -     -     -     -  Manual scene recording started.
12:24:02.73  SWS      -     -     -     -  Dark measurement started.
12:24:03.62  SWS      -     -     -     -  Manual scene recording started.
12:24:04.66  USH      -     -     -     -  Dark measurement started.
12:24:05.55  USH      -     -     -     -  Manual scene recording started.
12:24:06.57  LSH      -     -     -     -  Dark measurement started.
12:24:07.49  LSH      -     -     -     -  Manual scene recording started.
12:31:45.03  SWS      -     -     -     -  Dark measurement started.
12:31:45.92  SWS      -     -     -     -  Manual scene recording started.
12:31:47.97  USH      -     -     -     -  Dark measurement started.
12:31:48.83  USH      -     -     -     -  Manual scene recording started.
12:31:50.01  LSH      -     -     -     -  Dark measurement started.
12:31:50.92  LSH      -     -     -     -  Manual scene recording started.
12:33:50.21  ---      -     -     -     -  *** r
12:34:10.37  ---      -     -     -     -  *** end of profile ascent and start of profile
descent
```

12:34:20.77 SWS - - - - Dark measurement started.
12:34:21.64 SWS - - - - Manual scene recording started.
12:34:28.71 LSH - - - - Dark measurement started.
12:34:29.60 LSH - - - - Manual scene recording started.
12:34:30.35 USH - - - - Dark measurement started.
12:34:31.24 USH - - - - Manual scene recording started.
12:37:41.96 SWS - - - - Dark measurement started.
12:37:42.92 SWS - - - - Manual scene recording started.
12:37:44.59 USH - - - - Dark measurement started.
12:37:45.52 USH - - - - Manual scene recording started.
12:37:46.60 LSH - - - - Dark measurement started.
12:37:47.68 LSH - - - - Manual scene recording started.
12:39:53.32 --- - - - - *** just passed waypoint 80
12:41:37.49 --- - - - - *** profile interupt at 3000 ft
12:42:46.01 SWS - - - - Dark measurement started.
12:42:46.87 SWS - - - - Manual scene recording started.
12:42:48.04 USH - - - - Dark measurement started.
12:42:48.92 USH - - - - Manual scene recording started.
12:42:50.10 LSH - - - - Dark measurement started.
12:42:51.03 LSH - - - - Manual scene recording started.
12:43:31.66 --- - - - - *** profile descent recomenced
12:44:04.12 --- - - - - *** lsh vis looking noisy again
12:46:58.75 --- - - - - *** end of profile descent and statr
12:47:04.88 --- - - - - *** start of run at 500 ft
12:55:30.06 SWS - - - - Dark measurement started.
12:55:31.03 SWS - - - - Manual scene recording started.
12:55:32.01 USH - - - - Dark measurement started.
12:55:32.87 USH - - - - Manual scene recording started.
12:55:34.00 LSH - - - - Dark measurement started.
12:55:34.89 LSH - - - - Manual scene recording started.
12:59:42.71 --- - - - - *** cooler at 4 deg C still
12:59:45.76 SWS - - - - Dark measurement started.
12:59:46.64 SWS - - - - Manual scene recording started.
12:59:48.08 USH - - - - Dark measurement started.
12:59:49.04 USH - - - - Manual scene recording started.
12:59:50.02 LSH - - - - Dark measurement started.
12:59:50.88 LSH - - - - Manual scene recording started.
12:59:54.33 SWS - - - - Dark measurement started.
12:59:55.23 SWS - - - - Manual scene recording started.
12:59:57.58 USH - - - - Dark measurement started.
12:59:58.50 USH - - - - Manual scene recording started.
12:59:59.34 LSH - - - - Dark measurement started.
13:00:00.31 LSH - - - - Manual scene recording started.
13:00:00.66 LSH - - - - Manual scene recording started.
13:00:28.30 --- - - - - *** waypoint 87
13:02:16.26 --- - - - - *** lsh vis looking really bad now
13:05:37.75 SWS - - - - Dark measurement started.
13:05:38.63 SWS - - - - Manual scene recording started.
13:05:40.09 USH - - - - Dark measurement started.
13:05:40.96 USH - - - - Manual scene recording started.
13:05:42.61 LSH - - - - Dark measurement started.
13:05:43.49 LSH - - - - Manual scene recording started.
13:06:03.55 --- - - - - *** lsh vis looking a bit better but still noisy
13:10:06.80 --- - - - - *** turning at point 40 to head back to point 80 on reciprocal headng and lsh vis much much worse now
13:10:14.89 --- - - - - *** lsh vis unusable
13:10:26.76 --- - - - - *** climbing to 1000 ft
13:10:53.20 --- - - - - *** lsh vis temporarily recovered - but module clearly needs replacing
13:11:53.92 --- - - - - *** run at 1000 ft
13:12:08.76 --- - - - - *** run 5.1
13:13:37.35 SWS - - - - Dark measurement started.
13:13:38.26 SWS - - - - Manual scene recording started.
13:13:38.99 USH - - - - Dark measurement started.
13:13:39.87 USH - - - - Manual scene recording started.
13:13:40.54 LSH - - - - Dark measurement started.
13:13:41.44 LSH - - - - Manual scene recording started.
13:14:31.67 LSH - - - - Dark measurement started.

```
13:14:32.60  LSH      -     -     -     -  Manual scene recording started.
13:14:34.37  USH      -     -     -     -  Dark measurement started.
13:14:35.25  USH      -     -     -     -  Manual scene recording started.
13:14:36.98  SWS      -     -     -     -  Dark measurement started.
13:14:37.93  SWS      -     -     -     -  Manual scene recording started.
13:18:32.72  ---      -     -     -     -  *** cooler at 3 deg
13:20:02.21  ---      -     -     -     -  *** passed waypoint 87
13:22:48.32  ---      -     -     -     -  *** lsh vis has gone again
13:23:47.75  SWS      -     -     -     -  Dark measurement started.
13:23:48.70  SWS      -     -     -     -  Manual scene recording started.
13:23:49.32  USH      -     -     -     -  Dark measurement started.
13:23:50.21  USH      -     -     -     -  Manual scene recording started.
13:23:51.13  LSH      -     -     -     -  Dark measurement started.
13:23:52.07  LSH      -     -     -     -  Manual scene recording started.
13:26:39.18  SWS      -     -     -     -  Dark measurement started.
13:26:40.11  SWS      -     -     -     -  Manual scene recording started.
13:26:41.24  USH      -     -     -     -  Dark measurement started.
13:26:42.14  USH      -     -     -     -  Manual scene recording started.
13:26:43.75  LSH      -     -     -     -  Dark measurement started.
13:26:44.66  LSH      -     -     -     -  Manual scene recording started.
13:28:36.52  SWS      -     -     -     -  Dark measurement started.
13:28:37.41  SWS      -     -     -     -  Manual scene recording started.
13:28:38.37  USH      -     -     -     -  Dark measurement started.
13:28:39.26  USH      -     -     -     -  Manual scene recording started.
13:28:40.35  LSH      -     -     -     -  Dark measurement started.
13:28:41.22  LSH      -     -     -     -  Manual scene recording started.
13:30:00.36  ---      -     -     -     -  *** cooler at 2 deg C
13:30:09.56  ---      -     -     -     -  *** cooler back at 3 deg
13:30:45.26  ---      -     -     -     -  *** lsh vis dropped out again
13:31:35.45  ---      -     -     -     -  *** cooler at 4 deg
13:32:47.78  LSH      -     -     -     -  Dark measurement started.
13:32:48.71  LSH      -     -     -     -  Manual scene recording started.
13:32:49.69  USH      -     -     -     -  Dark measurement started.
13:32:50.59  USH      -     -     -     -  Manual scene recording started.
13:32:51.52  SWS      -     -     -     -  Dark measurement started.
13:32:52.41  SWS      -     -     -     -  Manual scene recording started.
13:33:10.01  ---      -     -     -     -  *** cooler at 5 deg
13:33:51.38  ---      -     -     -     -  *** 4 deg
13:34:21.24  ---      -     -     -     -  *** 5 deg
13:35:44.59  ---      -     -     -     -  *** 6 deg
13:36:05.22  ---      -     -     -     -  *** 5 deg
13:36:48.83  ---      -     -     -     -  *** end of run start of profile ascent
13:38:15.45  ---      -     -     -     -  *** correction start of profile climb now to
FL50
13:38:27.79  ---      -     -     -     -  *** profile 8.1
13:42:00.47  ---      -     -     -     -  *** 4 deg
13:47:10.37  ---      -     -     -     -  *** end of profile climb at FL100
13:47:20.78  ---      -     -     -     -  *** end of science
13:54:03.51  USH      -     -     -     -  Idling
13:54:03.57  SWS      -     -     -     -  Idling
13:54:03.63  LSH      -     -     -     -  Idling
13:54:07.91  SWS   -6.0     -     -     -  Telescope sent to 87.986
13:54:09.14  SWS   88.0     -     -     -  Telescope stopped.
13:54:14.78  SWS   88.0     -     -     -  Telescope sent to 112.232
```

Flight: B405

KEY

- Not Fitted
- Fitted, Not Operated
- Duff Data
- Minor Problems
- OK

Thermometers
- Cabin Temperature:
- Heimann:
- Deiced Temp:
- Non-deiced Temp:

Hygrometers
- FWVS:
- Buck CR2:
- General Eastern:
- Johnson Williams:
- Nevzorov:
- Total Water Probe:

Cameras
- Downward Facing:
- Forward Facing:
- Rearward Facing:
- Upward Facing:

Navigation + Aircraft
- Cruciform GPS:
- GIN Applanix:
- INU Honeywell:
- Radar Altimeter:
- RVSM IAS:
- RVSM Static Pressure:
- XR5 GPS:

Misc Core
- AMTG:
- AVAPS:
- Cabin Pressure:
- Fax machine:
- Printer:
- S9 Static Pressure:
- Satcom C:
- Satcom H:
- Turb Centre-Static:
- Turb Left Right:
- Turb Up-Down:
- Turb Horizontal Chk:
- Turb Vertical Chk:
- Weather Radar:

DLUs:
- DLU AERACK:
- DLU BBR Lower:
- DLU BBR Upper:
- DLU Core Chem:
- DLU Core Consoles:
- DLU Port Aft:
- DLU Port Fwd:
- DLU Stbd Fwd:

Radiometers
Lower:
- BBR (clear) Lower:
- BBR (IR) Lower:
- BBR (red) Lower:

Upper:
- BBR (clear) Upper:
- BBR (IR) Upper:
- BBR (red) Upper:

- ARIES:
- DEIMOS:
- IR Camera:
- JNO2 Lower:
- JNO2 Upper:
- JO1D Lower:
- JO1D Upper:
- MARSS:
- SHIMS Lower:
- SHIMS Upper:
- SWS:
- TAFTS:

Cloud Probes
- 2DC:
- 2DP:
- FFSSP:
- PCASP:
- 2DS:
- ADA:
- CAPS:
- CCN:
- CDP (fuselage):
- CDP (Canister):
- CIP 100:
- CIP 25:
- CPI:
- CVI:
- SID1:
- SID2:

Aerosol
- CPC 3025A:
- CPC 3786 H2O:
- Filters 47mm:
- Filters 90mm:
- Neph - Dry:
- Neph - Wet:
- PSAP:
- AMS:
- CPC 3025 (AMS):
- INC:
- VACC:
- CPC 3010A (CVI):
- SP2:
- UHSAS:

Chemistry
- CO Aerolaser 5002:
- NOx TE42C:
- Ozone TE49C:
- Ozone TE49:
- SO2 TE43C:
- TDLAS (NIR) CH4:
- TDLAS (NIR) CO2:
- FAGE:
- Formaldehyde:
- NOx FAAM:
- NOxy:
- ORAC:
- PAN:
- PERCA:
- Peroxide:
- PTRMS:
- TDLAS (1C):
- WAS Bags:
- WAS Bottles:

Misc Non-Core
- CASI/ATM:
- LIDAR:
- LTI:
- SAW Hygrometer:

Report Created 11/12/2008 16:39:01

Last Updated: 26/09/2008 09:55:51

Faults / Incidents Log

Flight No. B405
Date: 24/09/08

Instruments

1. Condensation running down inside of RF camera window.
2. SATCOM system stopped functioning: unable to connect to system
3. SMIMS lower not working properly
4. TAFTS drive core may need replacement
5. Water filled CPC needed restarting but otherwise ok

CVI -
Neph –PSAP -
SWS -
SHIMS -
AMS / SP2 -
Core Chem -
Cloud physics -
FWVS,
TAFTS,
AVAPS,
ARIES,
MARSS,
DEIMOS

Aircraft

ISDN Emails
Three sessions for sat picture download before unit failure

MPDS

Satcom-H Calls

Issues
Nil

Post Flight - Turb Probe Water Traps

1. Indicate Amount of Water: a) Nil b) 1-2 drops c) ¼ full or more d) Ice present
2. Emptied by:
3. Dried by

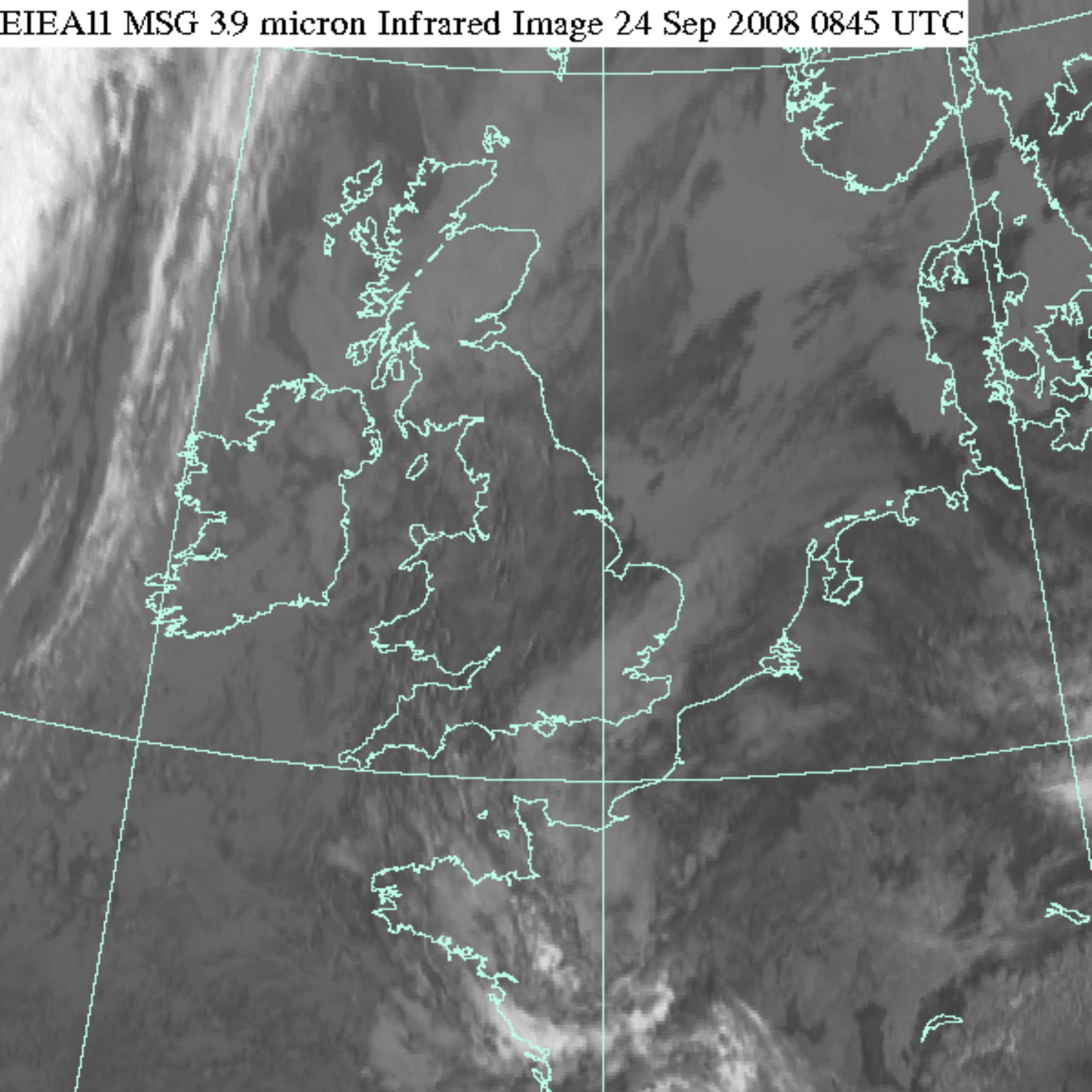
Pre-Flighter's Log

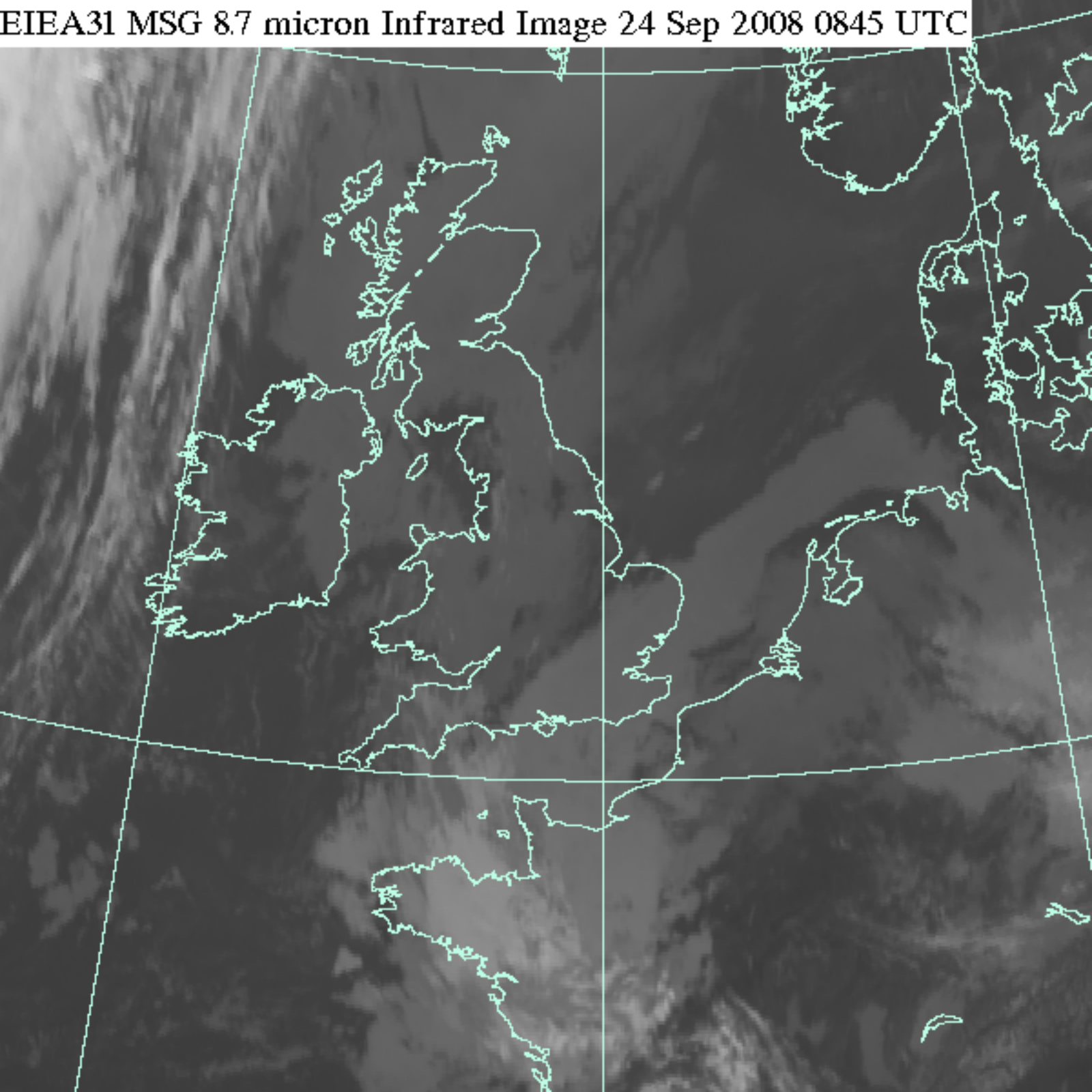
Date: 24 Sep 08 Flight No: B 405 Pre-Flighter: Jim C

No.	√ or x	Location	Action	Comments
1	✓	Hangar	Collect spanners for core chem	
		Aircraft Cabin: Power-up		
2	>	Core Chemistry	Gases x 3 ON	no CO
3	✓	Cabin	All Racks Checked	
4	✓	Core Chemistry	Instruments Checked OK	
5	>	Core Chemistry	CO Flows Checked OK	no CO
6	✓	Aft CorCon	All reqd CBs made	
7	✓	Fore CorCon	CBs made, PCs ON	
8	✓	HORACE	Optical Disk loaded	
9	✓	HORACE	Recording data	
10	✓	HORACE	DLU Status Checked	
11	✓	HORACE	HORACE Status Checked	
12	✓	Satcom H	Power LED ON	
13	✓	Nevzorov	Checked and OFF	
14	✓	Cameras Pictures	Checked x 4 OK	
15	✓	Video Laptop	Checked onboard	
16	>	FWVS	Set up & check on **AUTO**	no AUTO - OBR ops.
17	✓	Delced Rosemount	Heater Checked then OFF	
18	✓	Heimann	Calibration Checked	
19	✓	TWC	Fitted & signals checked	
20	✓	GE	Balance checked then back to DP	
21	✓	GPS (XR5M)	Checked	
22	✓	Satcom C	Checked	
23	✓	Video x 2	Records okay, Rewind	display only

No.	√ or x	Location	Action	Comments
24		Miss. Sci Laptop	Checked Onboard	In cockpit
25	✓	CNC	Butanol filled	
26	>	Dry Neph	Power up & Zero Cal	
27	>	PSAP	Pre-flight log actions complete	
28	>	CGPS	CBs and PC ON	not fitted
		External Checks		
29	✓	Turb Probe	Clean if reqd, Photo taken	
30	✓	JW	Cleaned & Checked	
31	✓	DI Rosemount	Cleaned & Checked	
32	✓	NDI Rosemount	Cleaned & Checked	
33	✓	Nevzorov	Cleaned/windings checked	some evidence of disruption.
34	✓	GE	Cleaned & Checked	
35	✓	Lower BBRs	Domes cleaned/checked	
36	✓	Camera Windows	Cleaned	
37	✓	Heimann	Lens checked OK	
38	✓	TWC Cover	Fitted if required	removed
39	✓	All other covers	Removed	
40	✓	Pre-flight Bag	Returned to hold	** Check no butanol**
41	✓	Tools	Check ALL in Toolkit	
42	✓	Tools	Avalon informed	

		Avalon Checks	Signed
44		Upper BBRs Checked & Cleaned	
45		ICEX applied	
46		Turb Probe - Traps emptied, detail contents -	a)Nil b)1-2 drops c)1/4 full or more
47		Turb Probe - Traps dried and resealed	


EIEA11 MSG 3.9 micron Infrared Image 24 Sep 2008 0845 UTC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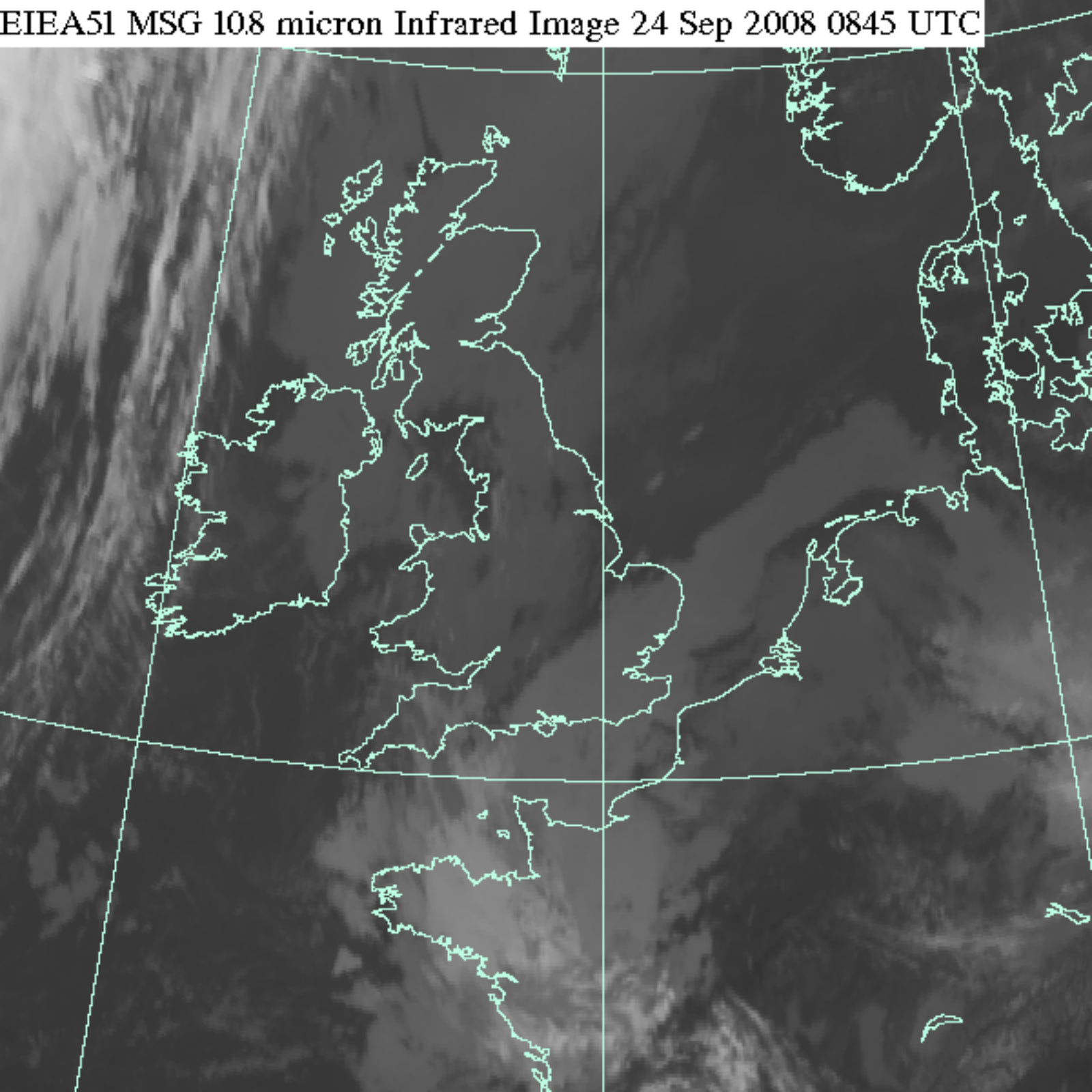
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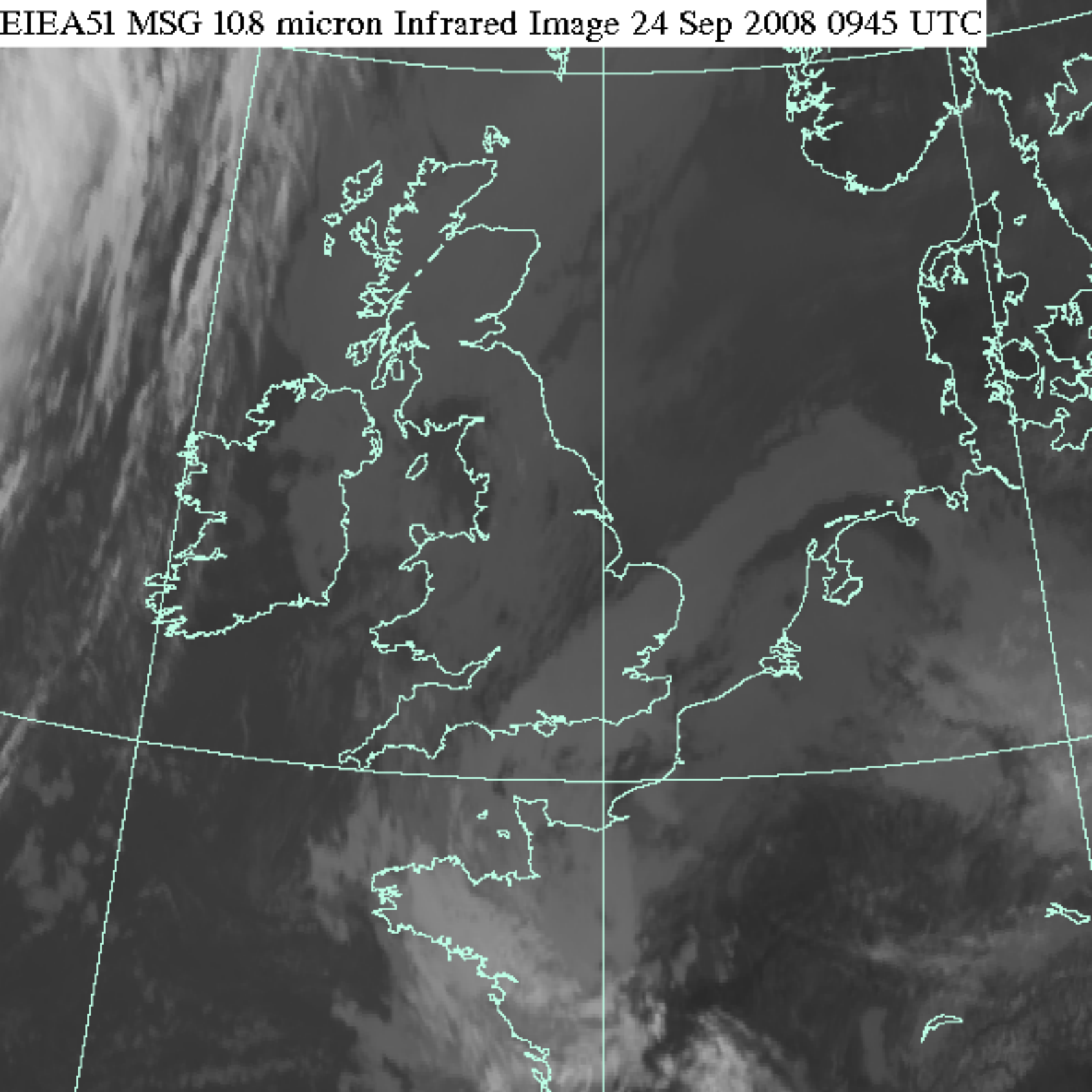
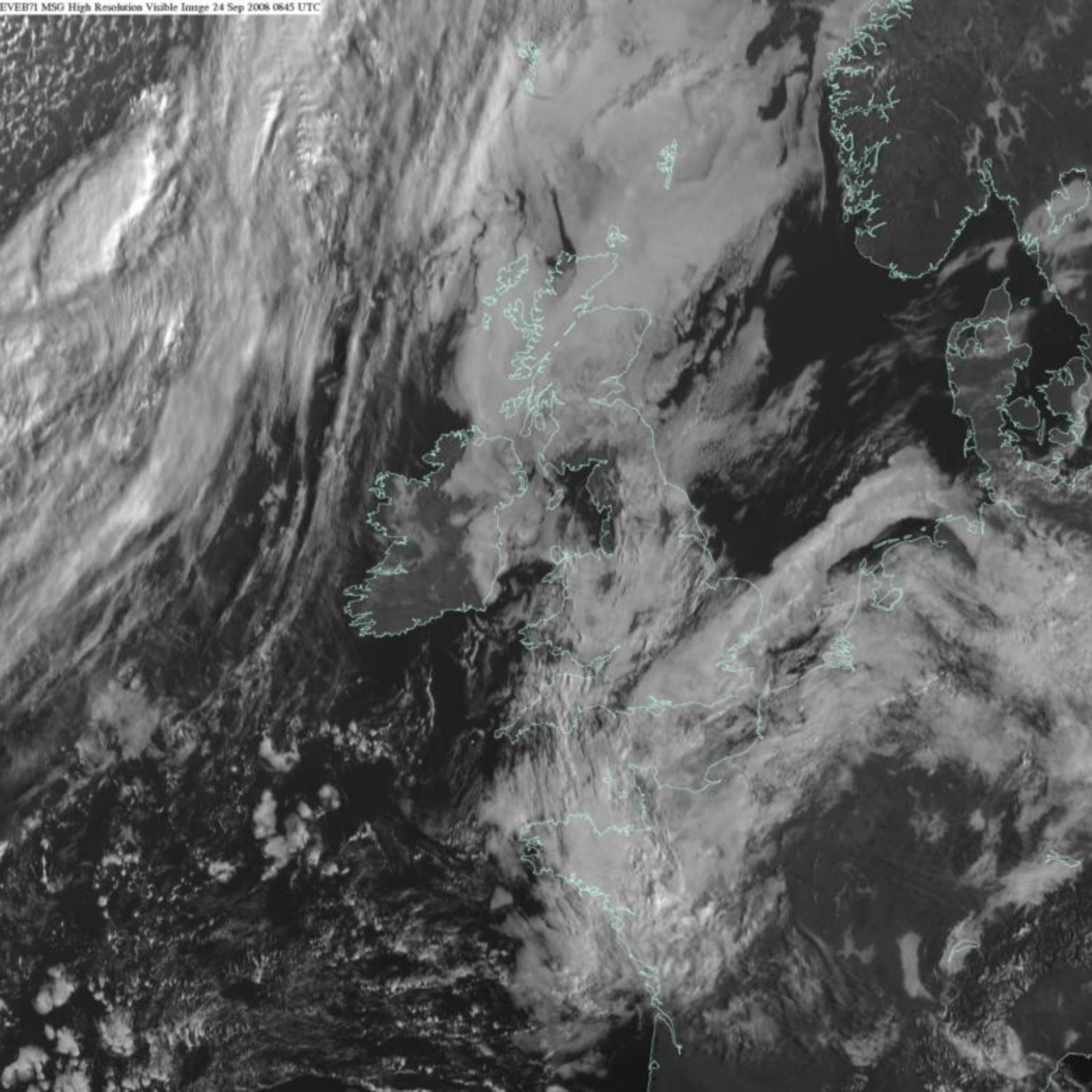
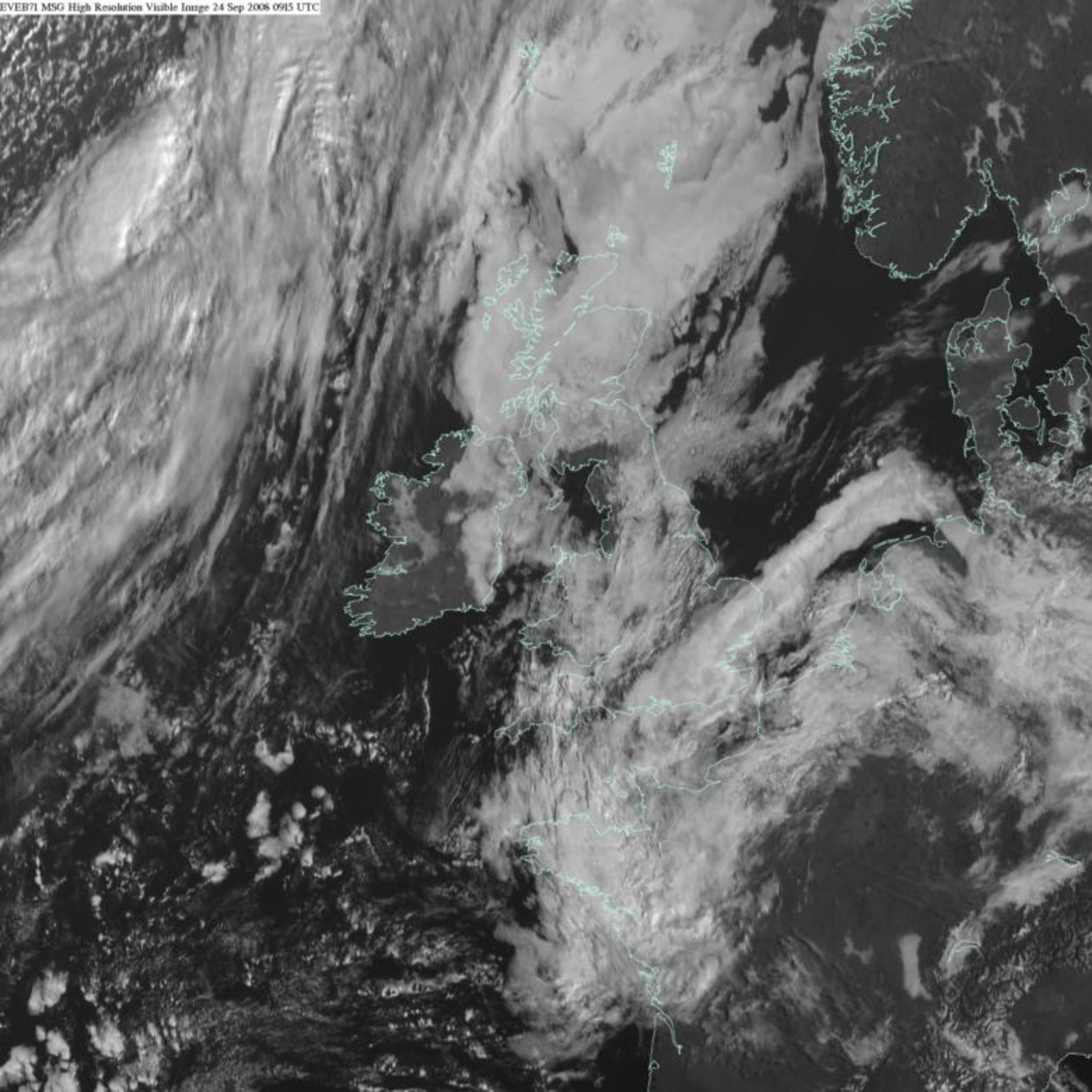
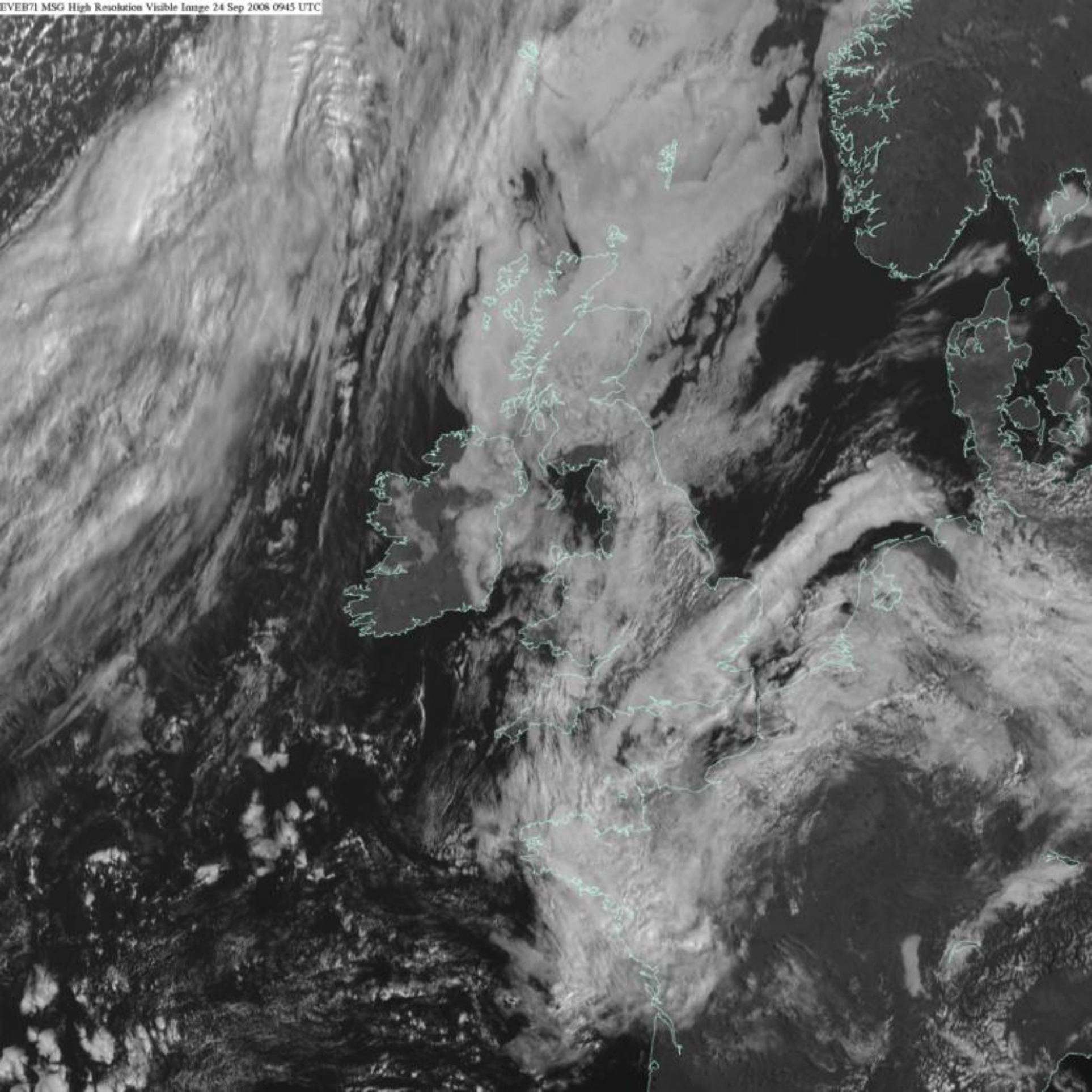

EIEA51 MSG 108 micron Infrared Image 24 Sep 2008 0945 UTC


EVEB71 MSG High Resolution Visible Image 24 Sep 2008 0845 UTC


EVEB71 MSG High Resolution Visible Image 24 Sep 2008 0915 UTC


EVEB71 MSG High Resolution Visible Image 24 Sep 2008 0945 UTC

MISSING LOG SHEETS:

The following log sheets are not available for flight B405:

Log	Reason
Core Chemistry / TDLAS	no In Flight log except in cases of instrument problems
TAFTS	AMS / SP2 operator does not create a log sheet
AMS / SP2 log	AMS / SP2 operator does not create a log sheet
Dry Neph	Operator does not create a log sheet
CVI	No log sheet has been provided so far for this flight

Document control

Revision	Date	Author	Comments
r0	10 Sep 2009	Doug Anderson	Initial version missing the above noted logs
r1			
r2			

VIDEO RECORDINGS:

The following video recordings in avi format should be available at the BADC :

faam-video-dfc_faam_20080924_r0_b405_094223_1hz.avi
faam-video-dfc_faam_20080924_r0_b405_104223_1hz.avi
faam-video-dfc_faam_20080924_r0_b405_114223_1hz.avi
faam-video-dfc_faam_20080924_r0_b405_124223_1hz.avi
faam-video-dfc_faam_20080924_r0_b405_134223_1hz.avi

faam-video-rfc_faam_20080924_r0_b405_094215_1hz.avi
faam-video-rfc_faam_20080924_r0_b405_104215_1hz.avi
faam-video-rfc_faam_20080924_r0_b405_114215_1hz.avi
faam-video-rfc_faam_20080924_r0_b405_124215_1hz.avi
faam-video-rfc_faam_20080924_r0_b405_134216_1hz.avi

faam-video-ffc_faam_20080924_r0_b405_094213_1hz.avi
faam-video-ffc_faam_20080924_r0_b405_104213_1hz.avi
faam-video-ffc_faam_20080924_r0_b405_114213_1hz.avi
faam-video-ffc_faam_20080924_r0_b405_124213_1hz.avi
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faam-video-ufc_faam_20080924_r0_b405_094219_1hz.av
faam-video-ufc_faam_20080924_r0_b405_104219_1hz.avi
faam-video-ufc_faam_20080924_r0_b405_114219_1hz.avi
faam-video-ufc_faam_20080924_r0_b405_124219_1hz.avi
faam-video-ufc_faam_20080924_r0_b405_134219_1hz.avi

No Digital8 video recordings were made on this flight.